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# FARMERS' SHORT COURSES

October 2 to November 10, 1916

UNIVERSITY FARM  
DAVIS



University of California Bulletin

THIRD SERIES. Vol. IX, No. 12

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# Administrative Bulletins of the University of California

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## ORGANIZATION OF THE UNIVERSITY

The University of California is an integral part of the public educational system of the State. As such it completes the work begun in the public schools. Through aid from the State and the United States, and by private gifts, it furnishes instruction in literature and in science, and in the professions of engineering, art, law, medicine, dentistry, and pharmacy. In the Colleges of Letters and Science, Commerce, Agriculture, and Engineering these privileges are offered without charge for tuition, to all residents of California who are qualified for admission. Non-residents of California are charged a tuition fee of ten dollars each half-year. In the professional colleges, except that of Law, tuition fees are charged. The instruction in all the colleges is open to all qualified persons, without distinction of sex. The Constitution of the State provides for the perpetuation of the University, with all its departments.

Letters of inquiry concerning the College of Agriculture should be addressed to the *Dean of the College of Agriculture, Berkeley, California.*

For the following circulars of information concerning the several colleges and departments of the University apply to the *Recorder of the Faculties, University of California, Berkeley, California.*

1. The Circular of Information, Academic Departments (College of Letters and Science and Engineering, and the first two years of Medicine). Containing general information about the the University, its organization, government, faculties, requirements for admission both to graduate and undergraduate status, requirements for degrees and teachers' recommendations, expenses.
2. The Annual Announcement of Courses of Instruction in the Academic Colleges. Published annually in July. Price 10 cents. Sent by mail by the Recorder of the Faculties for 15 cents.
3. The Announcement of the Summer Session in the Academic Colleges, published annually in March. Sent free.

UNIVERSITY OF CALIFORNIA  
COLLEGE OF AGRICULTURE  
BERKELEY

AGRICULTURAL EXPERIMENT STATION  
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UNIVERSITY FARM SCHOOL

COLLEGE OF AGRICULTURE

JUN 2 1916

ANNOUNCEMENT

OF

FARMERS' SHORT COURSES

IN

GENERAL AGRICULTURE, DAIRY MANUFACTURES,  
HORTICULTURE AND POULTRY HUSBANDRY

HELD AT THE

UNIVERSITY FARM, DAVIS, CALIFORNIA

OCTOBER 2 TO NOVEMBER 10, 1916

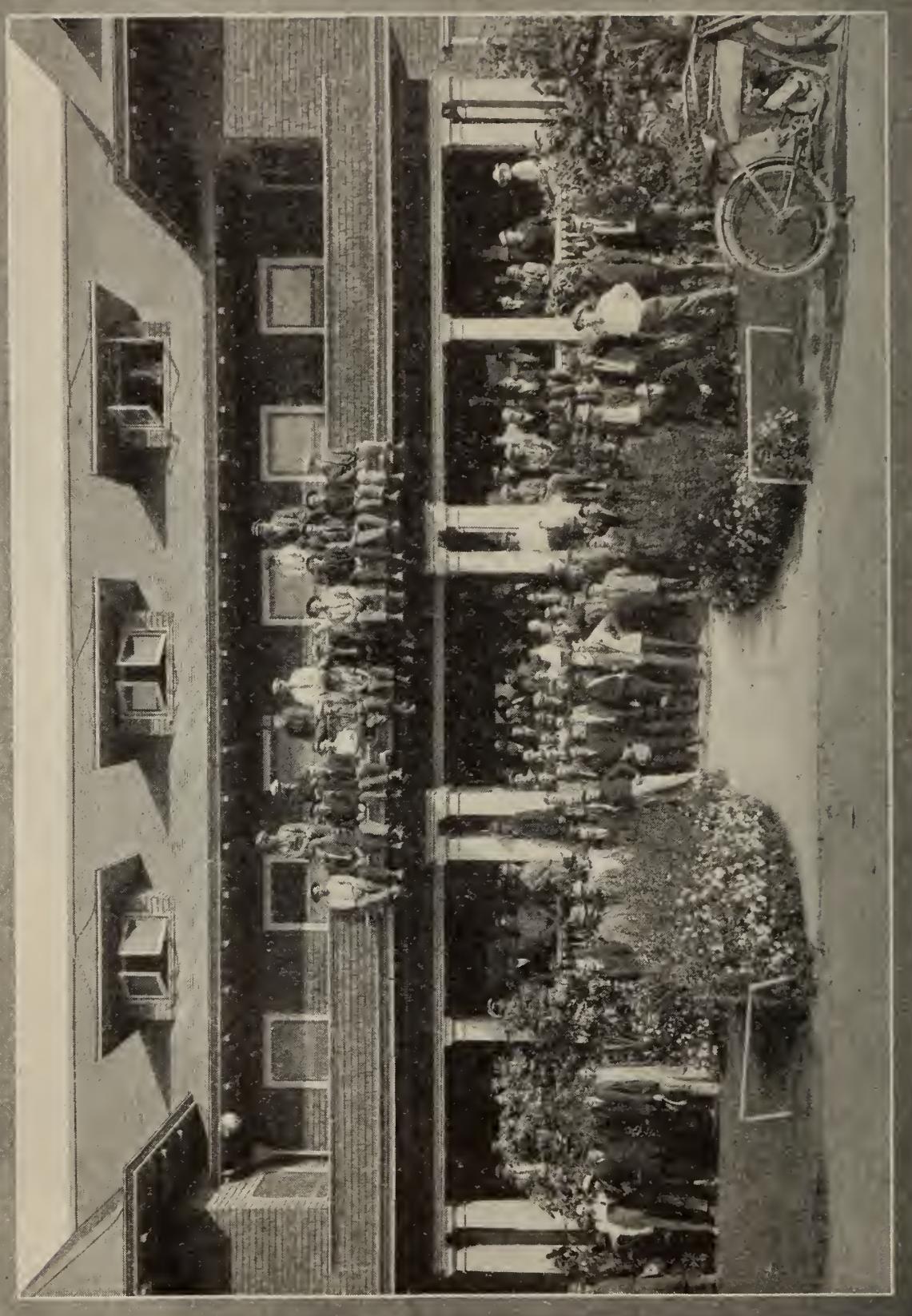
AND

TRACTOR SHORT COURSE

NOVEMBER 13 TO 24, 1916

UNIVERSITY OF CALIFORNIA PRESS  
BERKELEY

Farmers' Short-Course Students in 1915



## THE FARMERS' SHORT COURSES

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The purpose of the Short Courses in Agriculture is to enable persons, especially those of mature years and ranch experience, to acquire a knowledge of the fundamental principles of agriculture and of the results of the latest investigations in practical ranch work, in the production of fruit, grains, and live stock of the various classes. The rapidity with which the science of agriculture has developed and the many ways in which ranch profits may be increased or losses reduced make it highly desirable for the modern rancher to add the fruits of the latest research to his own practical experience.

There is no state in the Union where agriculture is so diversified as in California, and it is to meet this situation that the College of Agriculture has arranged for the conduct of the Farmers' Short Courses at the University Farm, in which instruction is offered in subjects relating to all branches of agriculture of importance to the state. Separate courses will be given in the following subjects: General Agriculture, Dairy Manufactures (for creamery men and cheese makers), Horticulture, including deciduous fruits, citrus and semitropical fruits, viticulture and olives, Poultry Husbandry, and Farm Tractors.

An examination of the schedule of studies beginning on page 14 will show how large is the programme that is offered during the six weeks beginning October 2, 1916. The student is taught both by lectures and by practical exercises. He is required to do things which will make him more expert in his work of stock raising, dairying, or fruit growing. To test milk, to judge live stock, to immunize hogs and perform simple surgical operations are only a few of the practical things which a student is taught to do. On account of the large number of lectures and practical exercises offered in these courses, it is impossible for a person to take all exercises during one session. In fact, only about one-

third of the lectures or practice periods could be taken by a person in any one year. For this reason many have found it to their advantage to attend several sessions of the Short Courses.

#### THE UNIVERSITY FARM

There are few places in California today that are more interesting to farmers than the University Farm, with its numerous lines of experimental work, its instruction to University students, and its three hundred Farm School students. This farm, which was purchased in accordance with a California statute of 1905, comprises 779 acres of fine alluvial soil. It is situated at Davis, Yolo County, a station on the main line of the Southern Pacific Railroad, thirteen miles west of Sacramento and seventy-six miles from San Francisco. A large variety of products are grown on the University Farm, both by irrigation and by dry farming. The facilities for investigations on the duty of water are probably unequaled anywhere, and a most complete collection of devices for measuring water are installed so that their actual operation may be seen and understood.

#### BUILDINGS AND EQUIPMENT

The farm is provided with numerous buildings for instruction in the various phases of agriculture and horticulture. These include a large auditorium building, a commercial creamery, stock pavilion, animal husbandry, horticulture, and veterinary science buildings, mechanical shops, three dormitories, a large dining hall, and buildings for horses, dairy and beef cattle, sheep, swine, and poultry. One concrete silo and four wooden silos furnish succulent feed throughout the year for the stock kept.

There are over 150 head of cattle, the following breeds being represented: Holstein-Friesian, Jersey, Guernsey, and Ayrshire among the dairy breeds, and Hereford, Shorthorn, and Aberdeen Angus among the beef breeds.

There are the following breeds of sheep: Shropshire, Hampshire, Southdown, Cotswold, Rambouillet, and Romney Marsh. In the aggregate there are about 150 head of sheep. Representatives of milch goats and Angoras are also kept.

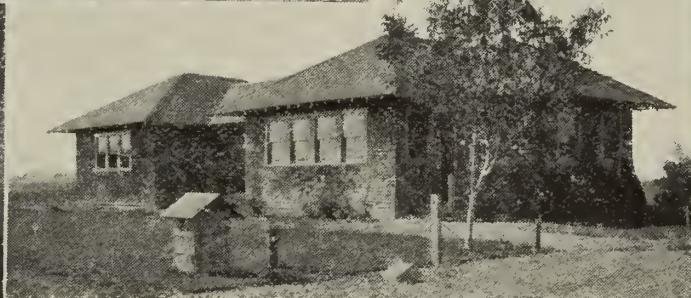
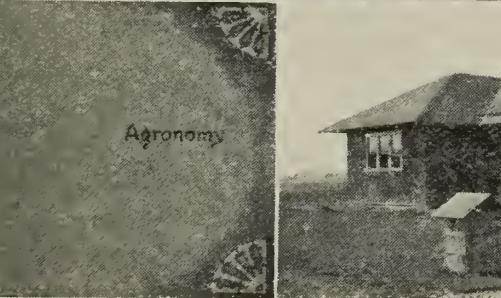
COLLEGE OF AGRICULTURE



Poultry Husbandry



Horticulture



Hog raising is highly developed. The total number of hogs handled each year is about 400, representing the Poland-China, Berkshire, Duroc-Jersey, Tamworth, Chester White, and Large Yorkshire breeds. The breeding herd consists of toward forty brood sows.

There are 35 acres of vineyards and about 550 varieties of grapes; 60 acres of almond, peach, prune, apricot, apple, pear, cherry, walnut, and olive orchards. Budding, grafting, pruning, and spraying are all taught by actual practice. Sixty acres are devoted to experiments with field and forage crops.

Thorough instruction in butter, cheese, and ice-cream making is offered in connection with the commercial creamery course.

#### LIBRARY FACILITIES

The library of the University Farm contains about 2500 volumes of books, mainly along agricultural and allied lines. Sets of the publications of the State Agricultural Experiment Stations and of the United States Department of Agriculture are also kept on file, as well as about one hundred and fifty American and foreign periodicals, including the main agricultural papers and scientific journals of the day. Books not in the library of the University Farm may be secured either from the main University Library at Berkeley or by special arrangements from the State Library at Sacramento, or the Yolo County Library at Woodland. In this manner books far in access of the number on the shelves in the library at the University Farm are rendered available to students in the courses held at the University Farm.

The reading room and library are open to students from 8 to 12 and from 1 to 6 daily; also in evenings from 7 to 9, except on Sunday, when it is open from 2 to 5 p.m.

#### NUMBER OF COURSES

Three Short Courses, each lasting six weeks, are offered during the fall of 1916, from October 2 to November 10, viz.: Agriculture, Horticulture, and Poultry Husbandry. The course

*October 2 to November 10, 1916*

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COLLEGE OF AGRICULTURE



Farm Office



Campus Scene



Classroom Building



Dining Hall



in Dairy Manufactures will also commence October 2 and will continue until November 25. This course will be divided into two sections, one of six weeks' duration devoted to creamery butter making and related subjects, and the other of two weeks' duration devoted to cheese making. During the last three weeks of the Short Course in Horticulture special courses are offered in Citrus and Semi-tropical Fruits, and in Viticulture and Olives. A practice course in Farm Tractors of two weeks' duration, November 13-24, will be offered next fall for the first time in connection with the Farmers' Short Courses.

#### ADMISSION

There are no entrance examinations to the Farmers' Short Courses and no restrictions as to sex, but applicants must be at least 18 years of age.

#### EXPENSES

*Fees and Deposits.*—A registration fee of \$2 is charged each student. A deposit of \$3 for breakage is also charged, but the portion not needed to pay for breakage will be returned. The full fee and deposit for each course are to be paid whether the participant is present during the whole or only a part of the course.

*Rooms.*—Most of the rooms in the school dormitories are rented to students who occupy them eight months of the year. Short Course students will be accommodated so far as rooms are available, in the order of application accompanied by the Short Course registration fee of \$2. Rooms will not be assigned before September 25, nor held after 5 p.m., October 2.

In the town of Davis, in private homes, within five to fifteen minutes' walk of the University Farm, are many rooms for rent. A member of the staff of the school will assist students in securing accommodations.

*Board.*—Board may be secured in the University Farm Cafeteria at an expenditure that need not exceed \$5 per week.

*Books and Special Clothing.*—Dairy students are required to wear white suits, which may be purchased in Davis at \$1.50 per

*October 2 to November 10, 1916*

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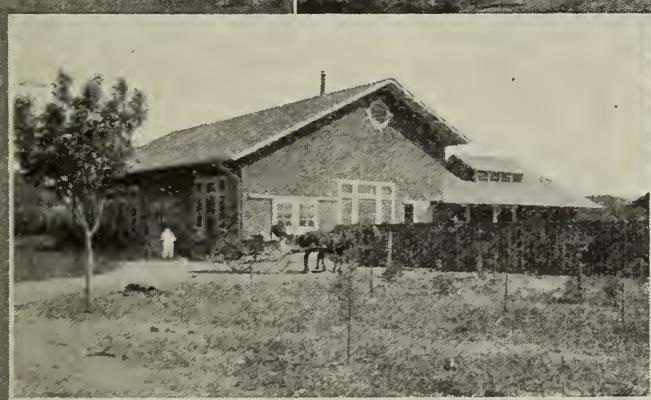
COLLEGE OF AGRICULTURE

Dairy Industry



General View of Stock Building

Dairy Barn



Veterinary Science

suit or brought from home. Other students will find it desirable to have overalls for working around stock barns or machinery. Books and other necessary supplies may be purchased in the Associated Students' Store at the University Farm.

The total expenses incident to attending the Farmers' Short Courses will not ordinarily exceed \$60, exclusive of railroad fare.

#### RAILROAD RATES

Students enrolled in the Short Courses may secure a round-trip rate of one and one-third lowest first-class fare on the receipt-certificate plan from all stations in California on the Sante Fe, Southern Pacific, and Western Pacific railroads. Stop-over privileges may be secured on the going trip if the agent at the initial point is asked for ticket allowing such privilege and by paying the regular stop-over fare. No stop-overs are allowed on the return trip. In all cases ask for receipt-certificate when purchasing ticket to Davis.

For enrollment blanks to the Farmers' Short Courses address Dean, University Farm School, Davis, California.

COLLEGE OF AGRICULTURE



North and South Dormitories



Living Room in Dormitory



West Dormitory

## THE SHORT COURSE IN AGRICULTURE

OCTOBER 2 TO NOVEMBER 10, 1916

The Short Course in Agriculture is planned to meet the needs of farmers more especially interested in general agriculture or stock raising. Any man who is a grain farmer, a stock raiser, or a dairy farmer, or who intends to engage in any of these activities should be greatly benefited by this course. If it enables him to save just one horse, or increase his dairy production 5 per cent, or the yield of barley only two bushels per acre, he will be amply repaid for the time and expense of the course. Some of the special subjects taught are outlined below.

*Animal Husbandry*.—The work offered in Animal Husbandry includes lectures and demonstrations dealing with the breeding, feeding, care, management and judging of the various pure breeds and market classes of farm animals.

*Farm Management*.—A portion of the time will be taken up with discussions of a sample farm carried through the process of choosing, getting capital, general plan of work, layout of fields, equipment, character of crops, probable yields, selling product, accounting, cost data, leasing portion, selling portion, law questions, hiring men, and kindred subjects.

*Agricultural Engineering*.—A study of the farm implements and machinery applicable to California agriculture; practice work in handling gas engines, ignition, farm tractors, etc.; electric motors; power machinery; rural lighting plants; pumping; factors concerned in the construction of farm buildings, use of the steel square, forge work, welding and tempering, etc.

*Field and Forage Crops*.—The work in Field and Forage Crops will consist primarily of lectures covering the fundamental principles of dry farming, the successful growing of grain, forage and cover crops, with special reference to their adaptation and culture in California. One practice period of

COLLEGE OF AGRICULTURE



Animal Industry Building

Stock Judging Pavilion



Beef Barn



Horse Barn



Sheep Barn



two hours per week will be given over to the study of crops, especially as regards the scoring and judging of cereals.

*Irrigation.*—This work consists of a study of soil moisture and its relation to plant growth, the units of measurement of water, with lectures and field demonstrations illustrating the necessity and methods of measuring water; the preparation of land and methods of irrigating alfalfa, orchards, field crops, etc. Special attention is given to the water requirements of different crops, proper time of irrigation, costs and returns, methods and cost of construction of farm laterals, head gates, concrete pipe lines, etc.; the use of flumes, pipe lines, etc., in the delivery of water; design and construction of pumping plants and reservoirs and their use in irrigation practice.

The above work will be illustrated by two all-day field demonstrations dealing with practical irrigation problems.

*Veterinary Science.*—The care and treatment of sick animals; treatment for common diseases and ailments; minor operations. Special attention is given to hog cholera and tuberculosis; practice work bearing directly on the course is given.

In addition to the subjects above mentioned, lectures and practice in Horticulture and Dairying are given to students in the Short Course in Agriculture. A complete daily programme of studies is given in the following pages. It is only by a careful study of this schedule that the prospective student can fully appreciate the opportunities that are presented for increasing his earning power through the knowledge that may be gained in these courses.

#### SCHEDULE OF THE SHORT COURSE IN AGRICULTURE

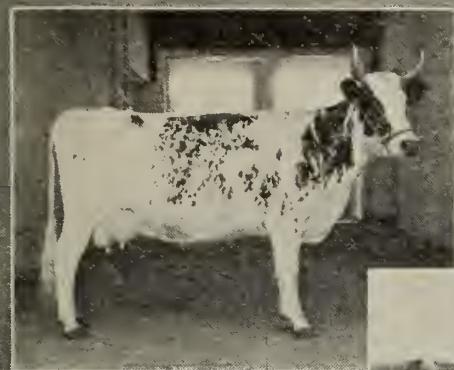
OCTOBER 2 TO NOVEMBER 10, 1916

##### *First Week*

Oct. 2—8-12}      Registration hours.  
          1-5 }

7:30      Opening session. Music. Addresses: Benj. Ide Wheeler, President of University of California; Judge Peter J. Shields, and Thomas Forsyth Hunt, Dean of College of Agriculture; H. E. Van Norman, Dean of University Farm School, presiding.

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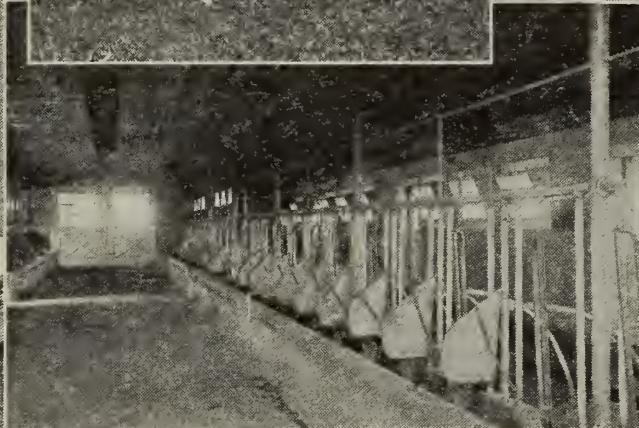


Ayrshire



Hereford

Interior of Dairy Barn



Stock Judging

Holstein Calves



Oct.	3—	8-9	Lecture: Selection of Land for Irrigation Farming.	S. H. Beckett
		9-10	Lecture: Breeds of Beef Cattle.	G. H. True
		10-11	Lecture: Conservation of Moisture.	B. A. Madson
		11-12	Lecture: The Business Aspects of Farming.	R. L. Adams
		1-3	Practice: Study of Wheat Types and Varieties; Scoring Wheat.	B. A. Madson
			Practice: Dairy Testing Laboratory.	L. M. Davis
		3-5	Practice: Judging Beef Steers.	G. H. True
Oct.	4—	8-9	Lecture: Handling the Pure-bred Beef Herd.	G. H. True
		9-10	Lecture: Wheat Culture.	B. A. Madson
		10-11	Lecture: Measurement of Water for Irrigation; Unit of Measurement.	S. H. Beckett
		11-12	Convocation.	
		1-3	Practice: Judging Beef Cows.	G. H. True
		3-5	Lecture and Practice: Digestive Diseases of Cattle.	F. M. Hayes
Oct.	5—	8-9	Lecture: Plant Propagation—Propagation by Seeds and Cuttings.	
		9-10	Lecture: Feeding for Market.	G. H. True
		10-11	Lecture: Babcock Test for Butterfat in Milk.	L. M. Davis
		11-12	Lecture: Establishing the Business of Farming.	R. L. Adams
		1-3	Practice: Study of Wheat Types and Varieties; Scoring Wheat.	B. A. Madson
			Practice: Dairy Testing Laboratory.	L. M. Davis
		3-5	Practice: Judging Beef Bulls.	G. H. True
		7:30	Public lecture: How the Short-Course Students Can Use the College of Agriculture.	W. T. Clarke
Oct.	6—	8-10	Practice: Measurement of Water for Irrigation; Irrigation Measuring Devices.	S. H. Beckett
		10-11	Lecture: Gas Engines.	J. B. Davidson
		11-12	Lecture: Wheat Culture.	B. A. Madson
		1-2	Lecture: Origin and Formation of Soils.	C. F. Shaw
		2-4	Practice: Soils.	Alfred Smith
		7:30	Public Lecture: Rural Credits and Land Settlement.	Elwood Mead
Oct.	7—	8-9	Lecture: Plant Propagation—Budding.	W. L. Howard
		9-10	Lecture: Formation and Classification of Soils.	C. F. Shaw
		10-12	Practice: Soils.	Alfred Smith

*Second Week*

Oct.	9—	8-9	Lecture: Babcock Test for Butterfat in Cream.	L. M. Davis
		9-10	Lecture: The Farmer's Home Vegetable Garden.	S. S. Rogers
		10-12	Practice: Handling Gas Engines.	J. B. Davidson
		1-3	Lecture and Conference: The Farmer's Home Vegetable Garden.	S. S. Rogers
		3-5	Lecture and Practice: Blackleg and Anthrax in Cattle.	F. M. Hayes
		7:30	Public Lecture: Cow Testing Associations (Illustrated).	G. H. True
Oct.	10—	8-9	Lecture: Irrigation of Alfalfa.	S. H. Beckett
		9-10	Lecture: Breeds of Dairy Cows.	G. H. True
		10-11	Lecture: Oat Culture.	B. A. Madson
		11-12	Lecture: Livestock Production as a Business.	R. L. Adams
		1-3	Practice: Study of Oat and Barley Varieties; Scoring Oats and Barley.	B. A. Madson
			Practice: Dairy Testing Laboratory.	L. M. Davis
		3-5	Practice: Judging Dairy Cows.	G. H. True

*October 2 to November 10, 1916*

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Sheep Barn  
and Corrals

Hogs in Alfalfa



Pure-breds



Scoring Hogs



Oct. 11— 8-9	Lecture: Building the Dairy Herd.	G. H. True
9-10	Lecture: Barley Culture.	B. A. Madson
10-11	Lecture: Irrigation of Grain and Cultivated Field Crops.	S. H. Beckett
11-12	Convocation.	
1-3	Practice: Judging Holstein Cows.	G. H. True
3-5	Lecture and Practice: Abortion, Sterility and Retained Afterbirth in Cattle.	J. Traum
Oct. 12— 8-9	Lecture: Plant Propagation—Grafting.	W. L. Howard
9-10	Lecture: The Needs and Advantages of Drainage.	W. W. Weir
10-11	Lecture: Insects of Stored Grain.	E. R. deOng
11-12	Lecture: Poultry Production as a Business.	R. L. Adams
1-3	Practice: Study of Oat and Barley Varieties. Scoring Oats and Barley.	B. A. Madson
	Practice: Dairy Testing Laboratory.	L. M. Davis
3-5	Practice: Judging Guernsey Cows.	G. H. True
7:30	Public Lecture: The Agricultural Extension Work and the City Dweller.	W. T. Clarke
Oct. 13— 8-9	Lecture: Ignition, Adjustment.	J. B. Davidson
9-10	Lecture: California Feeding Stuffs.	F. W. Woll
10-11	Lecture: Corn Culture.	B. A. Madson
11-12	Lecture: Cost of Installation of a Farmer's Pumping Plant, Relative Economy of Gasoline Engines and Electric Motors. Construction of Wells.	B. A. Etcheverry
1-2	Lecture: Continuation of same subjects.	B. A. Etcheverry
2-3	Lecture: Physical Properties of Soils.	C. F. Shaw
3-5	Practice: Soils.	Alfred Smith
Oct. 14— 8-9	Lecture: Nursery Stock and Choice of Stock for Soils.	
		W. L. Howard
9-10	Lecture: Soil Moisture, Amounts, Movements.	C. F. Shaw
10-12	Laboratory: Soils.	Alfred Smith

*Third Week*

Oct. 16— 8-9	Lecture: Care of Milk and Cream on the Farm.	L. M. Davis
9-11	Practice: Soldering, Belt Lacing, etc.	Jas. Koeber
11-12	Lecture: The Construction of Dairy Buildings for California.	C. L. Roadhouse
1-2	Lecture: Plant Diseases; Cereals.	Ralph E. Smith
2-3	Lecture: Practical Methods of Producing Clean Milk.	C. L. Roadhouse
3-5	Practice: The Treatment of Wounds.	F. M. Hayes
7:30	Lectures: Construction of Silos. Making and Feeding of Silage.	J. B. Davidson F. W. Woll
Oct. 17— 8-9	Lecture: Irrigation of Orchards, Laying out the Distributing System.	R. D. Robertson
9-10	Lecture: Feeding Dairy Cows.	F. W. Woll
10-11	Lecture: Culture of Non-saccharine Sorghums.	B. A. Madson
11-12	Lecture: Swine Production as a Business.	R. L. Adams
1-3	Practice: Study of Corn Types and Varieties. Scoring Corn.	B. A. Madson
	Practice: Dairy Testing Laboratory.	L. M. Davis
3-5	Practice: Judging Jersey Cows.	G. H. True

Oct. 18— 8-9	Lecture: Irrigation of Orchards, Methods and Practice.	R. D. Robertson
9-10	Lecture: Rice Culture.	B. A. Madson
10-11	Lecture: Irrigation of Orchards, Demonstrations of Methods and Practice by Lantern Slides.	R. D. Robertson
11-12	Convocation.	
1-3	Practice: Judging Dairy Heifers.	G. H. True
3-5	Lecture and Clinic: Hog Cholera and other Diseases of Hogs.	F. M. Hayes
Oct. 19— 8-9	Lecture: Orchard Culture—Tillage, Mulching, Cover and Shade Crops.	W. L. Howard
9-10	Lecture: Drainage in Humid Sections.	W. W. Weir
10-11	Lecture: Insects of Forage Crops.	E. R. deOng
11-12	Lecture: Field Crops Production as a Business.	R. L. Adams
1-3	Practice: Study of Corn Types and Varieties. Scoring Corn.	B. A. Madson
	Practice: Dairy Testing Laboratory.	L. M. Davis
3-5	Practice: Judging Dairy Bulls.	G. H. True
Oct. 20— 8-9	Lecture: Testing Cows for Advanced Registry.	F. W. Woll
9-10	Lecture: Distribution of Grasses.	P. B. Kennedy
10-11	Lecture: Calf Feeding.	F. W. Woll
11-12	Lecture: Ornamentation of Country Home Grounds.	J. W. Gregg
1-2	Lecture: Soil Moisture. Control and Modification.	C. F. Shaw
2-4	Practice: Soils.	Alfred Smith
4-5	Lecture: Electricity, Motors.	J. B. Davidson
7:30	Public Lecture: Landscape Improvement in Rural Communities (Illustrated).	J. W. Gregg
Oct. 21— 8-9	Lecture: Pruning.	W. P. Tufts
9-10	Lecture: Soils, Alkali, Drainage, Irrigation.	C. F. Shaw
10-12	Practice: Soils.	Alfred Smith

*Fourth Week*

Oct. 23— 8-9	Lecture: Pruning.	W. P. Tufts
9-11	Practice: Examination of Tillage Implements.	Jas. Koeber
11-12	Lecture: Common Plants Adapted for Country Home Decoration.	R. T. Stevens
1-2	Lecture: Requirements for Plant Growth.	C. B. Lipman
2-3	Lecture: Use of the Hand Cream Separator.	L. M. Davis
3-5	Lecture and Practice: Hog Cholera and Treatment to Prevent Cholera.	B. J. Cady
Oct. 24— 8-9	Lecture: Irrigation of Small Fruits.	W. A. Hutchins
9-10	Lecture: Breeding Herd of Hogs.	J. I. Thompson
10-11	Lecture: Useful Grasses of California.	P. B. Kennedy
11-12	Lecture: Fruit Production as a Business.	R. L. Adams
1-3	Practice: Study of Non-saccharine Sorghums, Types and Varieties. Scoring of Non-saccharine Sorghums.	B. A. Madson
	Practice: Dairy Testing Laboratory.	L. M. Davis
3-5	Practice: Judging Market Hogs.	J. I. Thompson
7:30	Public Lecture: The Real American Folk School (Illustrated).	O. J. Kern

Oct. 25—	8-9	Lecture: Care of Brood Sows and Pigs.	J. I. Thompson
	9-10	Lecture: Legumes and their Adaptation.	P. B. Kennedy
10-11	Lecture: Irrigation of Rice.	R. D. Robertson	
11-12	Convocation.		
	1-2	Lecture: Electricity, Motors. (Continued).	J. B. Davidson
	2-3	Lecture: Requirements for Plant Growth. (Continued).	C. B. Lipman
	3-5	Practice: Judging Poland China Hogs.	J. I. Thompson
Oct. 26—	8-9	Lecture: Quantities of Irrigation Water Different Soils can Retain.	Frank Adams
	9-10	Lecture: Principles of Draft of Wagon and Plow.	J. B. Davidson
10-11	Lecture: Legumes and their Adaptation. (Continued).	P. B. Kennedy	
	11-12	Lecture: Dairying as a Business.	R. L. Adams
	1-3	Practice: Study of Non-saccharine Sorghums, Types and Varieties. Scoring of Non-saccharine Sorghums.	B. A. Madson
		Practice: Dairy Testing Laboratory.	L. M. Davis
	3-5	Practice: Judging Duroc Jersey Hogs.	J. I. Thompson
Oct. 27—	8-9	Lecture: Pruning.	W. P. Tufts
	9-10	Lecture: Feeding Hogs for Market.	J. I. Thompson
10-12	Practice: Diseases of Sheep.	F. M. Hayes	
	1-2	Lecture: Veterinary Entomology.	W. B. Herms
	2-3	Lecture: Drainage in Irrigated Sections.	W. W. Weir
	3-5	Practice: Judging Berkshire Hogs.	J. I. Thompson
	7:30	Public Lecture: Health on the Farm.	W. B. Herms
Oct. 28—		Choice of all-day Excursion to Yolo County Farms, or Lecture and Demonstration: Conveyance of Irrigation Water on the Farm. Survey and Construction of a Farm Ditch.	S. T. Harding, S. H. Beckett

*Fifth Week*

Oct. 30—	8-9	Lecture: Pruning.	W. P. Tufts
	9-11	Practice: Methods of Making Field Determinations of Quantity of Irrigation Water to be applied.	S. H. Beckett
11-12	Lecture: The Use of Wood on the Farm.	M. B. Pratt	
	1-2	Lecture: The Chemical Composition of Soils and Its Significance.	C. B. Lipman
	2-3	Lecture: Causes of Variations in Cream Tests.	L. M. Davis
	3-5	Lecture and Practice: Examination of Horses for Soundness.	F. M. Hayes
Oct. 31—	9-10	Lecture: Breeds of Sheep.	R. F. Miller
	10-11	Lecture: Alfalfa Culture.	B. A. Madson
11-12	Lecture: Farm Bookkeeping. Demonstration of Assigned Practice.	R. L. Adams	
	1-3	Laboratory: Field Trip, Study of Grasses and Forage Crops.	P. B. Kennedy
		Practice: Dairy Testing Laboratory.	L. M. Davis
	3-5	Practice: The Teeth of the Horse.	F. M. Hayes
	7:30	Public Lecture: Problems in Citrus Culture (Illustrated).	H. J. Webber

COLLEGE OF AGRICULTURE

Threshing Barley



Harvesting Alfalfa



Sudan Grass



Heading Milo

Feterita



Nov. 1—	8-9	Lecture: Fine-Wool Sheep in California.	R. F. Miller
	9-10	Lecture: Veterinary Entomology.	W. B. Herms
	10-11	Lecture: Design and Construction of Tile Drains.	W. W. Weir
	11-12	Convocation.	
	1-2	Lecture: Theory and Practice of the Use of Fertilizers.	C. B. Lipman
	2-3	Lecture: Impurities and Viability of Agricultural Seeds.	P. B. Keunedy
	3-5	Practice: Judging Mutton Sheep.	R. F. Miller
Nov. 2—	8-9	Lecture: Tree and Fruit Diseases.	W. P. Tufts
	9-10	Lecture: The Draft Horse in California.	J. I. Thompson
	10-11	Lecture: Culture of Root Crops.	J. W. Gilmore
	11-12	Lecture: The Owner and the Tenant.	R. L. Adams
	1-3	Laboratory: Field Trip, Study of Grasses and Forage Crops.	P. B. Kennedy
	3-5	Practice: Dairy Testing Laboratory.	L. M. Davis
Nov. 3—	8-9	Practice: Judging Fine-Wool Sheep.	R. F. Miller
	9-10	Lecture: Tree and Fruit Diseases.	W. P. Tufts
	10-11	Lecture: Potato Culture.	B. A. Madson
	11-12	Lecture: Farm Implements and Machinery.	Jas. Koeber
	1-3	Lecture: Problems of the Beginning Farmer.	Thomas F. Hunt
	3-5	Lecture: Examination of Mowers and Manure Spreaders.	Jas. Koeber
	7:30	Lecture and Practice: Digestive Diseases of the Horse.	F. M. Hayes
		Public Lecture: Agricultural Education in California.	Thomas F. Hunt
Nov. 4—		Choice of Demonstration: Preparation of Land for Irrigation. (All day).	S. H. Beckett and O. W. Israelsen
	or		
	8-9	Lecture: Factors Concerned in Building Construction.	H. L. Belton
	9-11	Practice: Use of the Steel Square.	H. L. Belton
	11-12	Lecture: Use of the Forge.	R. C. Ingrim

*Sixth Week*

Nov. 6—	8-10	Practice: Forging and Welding.	R. C. Ingrim
	10-11	Lecture: Economics of the Tractor.	J. B. Davidson
	11-12	Lecture: The Farmer's Water Right in California.	Frank Adams
	1-2	Lecture: Lime, Gypsum, and Alkali.	C. B. Lipman
	2-3	Lecture: Factors Determining the Value of Butterfat.	L. M. Davis
	3-5	Lecture and Demonstration: Tuberculosis and the Tuberculin Test.	F. M. Hayes
Nov. 7—	8-9	Lecture: Tree and Fruit Diseases.	W. P. Tufts
	9-10	Lecture: Care and Keeping of Work Stock.	J. I. Thompson
	10-11	Lecture: Bean Culture.	B. A. Madson
	11-12	Lecture: Profit and Losses of Farming.	R. L. Adams
	1-2	Practice: Judging Cereals, Wheat, Barley, Oats, Corn, and Sorg-hums.	B. A. Madson
		Practice: Dairy Testing Laboratory.	L. M. Davis
	2-5	Demonstration: Slaughter Test and Meat Demonstration.	G. H. True
	7:30	Public Lecture: The Future of California Dairying.	H. E. Van Norman

Nov. 8—	8-9	Lecture: Care of Brood Mare and Colt.	J. I. Thompson
	9-10	Lecture and Demonstration: Veterinary Entomology.	S. B. Freeborn
10-11		Lecture: Design and Construction of Open Drains.	W. W. Weir
11-12		Convocation.	
	1-2	Lecture: Soil Bacteria and the Nitrogen Supply.	C. B. Lipman
	2-3	Lecture: Crop Rotation.	B. A. Madson
	3-5	Practice: Judging Draft Horses.	J. I. Thompson
Nov. 9—	8-9	Lecture: Spraying Machinery.	W. P. Tufts
	9-11	Practice: Cutting Model Rafters.	H. L. Belton
11-12		Lecture: Markets and Marketing.	R. L. Adams
	1-3	Practice: Judging Cereals, Wheat, Barley, Oats, Corn, and Sorghums.	B. A. Madson
		Practice: Dairy Testing Laboratory.	L. M. Davis
	3-5	Practice: Judging Mules.	J. I. Thompson
	7:30	Public Lecture: State, County, and City Forests for California. (Illustrated).	Walter Mulford
Nov. 10—	8-9	Lecture: Spraying Calendar.	W. L. Howard
	9-10	Lecture: Plant Diseases; Forage Crops.	Ralph E. Smith
10-11		Lecture: Farm Buildings.	J. B. Davidson
11-12		Lecture: Drainage Districts and Assessments.	W. W. Weir
	2-3	Lecture: Petroleum Products, Fuel and Oil.	Jas. Koeber
	3-5	Demonstration: Autopsy on Cow Reacting to Tuberulin Test.	F. M. Hayes

## THE SHORT COURSE IN HORTICULTURE

OCTOBER 2 TO NOVEMBER 10, 1916

The Short Course in Horticulture is designed to meet the needs of ranchers and fruit growers who cannot attend the three years' course in the University Farm School or the four years' course in the College of Agriculture, at Berkeley. There are perhaps thousands of persons in California who, experts though they may be in certain lines of fruit growing, will find the lectures and practice periods offered in this course during the six weeks beginning October 2, 1916, of dollars and cents value to them in the way of information and suggestion.

*Deciduous Fruits and Nuts.*—This course is designed to give the student instruction in the best cultural practices and the special requirements of deciduous fruits and nuts. This work involves studies of such questions as methods of propagation and root stocks used, special methods required in pruning and tillage, the value and adaptation of varieties, etc. Attention will be given to the insects and diseases of each type of fruit and the best methods of control. The following fruits will be considered: apple, pear, cherry, plum and prune, apricot, peach, almond, walnut. In addition, brief discussions of bush fruits and strawberries will be included.

One of the strongest features of the course will be the complete manner in which the subject of spraying is treated. The facilities at hand should enable any one to learn how to prepare all of the standard spraying solutions used for controlling the diseases and insects which infest orchard trees. The student should also be able to learn how to operate a power spraying outfit and to become acquainted with the different kinds of hand sprayers. Special attention will be given to a study of spray nozzles.

COLLEGE OF AGRICULTURE



Practice in  
Pruning

View in  
Orchard



Pruning  
Small Fruits



Plant Propagation



Practice work will be given in tree planting, pruning, and preparation and application of spray materials in the orchard.

*Vegetable Gardening*.—The lectures and practice periods in vegetable gardening will be exceedingly practical and adapted to the special needs of the fruit grower. Growing vegetables in the orchard is one of the best ways known for deriving a living income from the land while the trees are coming into bearing.

*Viticulture and Olives*.—In this course special methods useful to grape growers will be considered. Particular attention will be given to those parts of the subject which beginners should understand in order to avoid the common mistakes to which failure is due, and modern methods used by successful vineyardists will be explained and illustrated.

Field demonstrations will be made as complete as is practicable at this season, illustrating nursery work, grafting, planting, sulphuring, and the control of phylloxera.

In the course in olive culture will be considered the choice of location and olive varieties; the causes of success and failure in the industry; the methods of the best growers will also be described and suggestions made for improvement.

The making of pickles will be described and demonstrated as fully as possible during the fall.

*Citrus and Semitropical Fruits*.—This course is designed to cover the planting and general care of citrus and other semitropical fruit orchards in California. The topics discussed will deal with the fundamentals for success in raising citrus fruits and the chief reasons why many orchards fail to pay. There will be an exposition of the best modern practice in propagation, planting, cultivation, irrigation, fertilization, orchard heating, and handling of the fruits. The insects and diseases affecting these crops will be discussed and the most economical and effective control measures indicated.

During recent years many new semitropical fruits are being cultivated on a commercial scale. Specimens of the fruit, foliage, and flowers of these will be exhibited and the details of culture and outlook for profit discussed.

COLLEGE OF AGRICULTURE

Pruning  
Bearing Trees



Protecting Young Citrus  
Trees from Frost



Wrapping Young Citrus Trees to  
Protect from Frost and Cold.



Plant Propagation



The culture of the date and avocado is rapidly assuming commercial proportions in California. A brief survey of these industries will be given, together with an opportunity for free discussion.

*Entomology.*—Brief discussions of the different stages of insects are given, together with their manner of feeding, so that better application of the control measures can be made. Attention will be given to a study of injurious insects on the University Farm and in the immediate vicinity, besides work on sprays and fumigation.

General work in bee-keeping and some special problems will be included.

### SCHEDULE OF THE SHORT COURSE IN HORTICULTURE

OCTOBER 2 TO NOVEMBER 10, 1916

#### DECIDUOUS FRUITS AND NUTS; VEGETABLE GARDENING

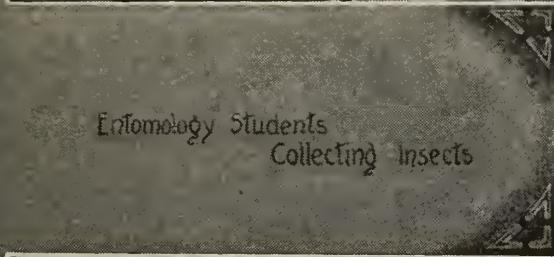
##### *First Week*

Oct. 2—	8-12 {	Registration hours.	
	1-5 }		
	7:30	Opening Session: Music. Addresses: Benj. Ide Wheeler, President of the University of California; Judge Peter J. Shields, and Thomas Forsyth Hunt, Dean of College of Agriculture; H. E. Van Norman, Dean of University Farm School, presiding.	
Oct. 3—	8-10	Practice: Fruit Tree Borers (Pome and Stone Fruits). E. R. deOng	
	10-12	Practice: Internal Insecticides. W. L. Howard	
	1-3	Practice: Red Spider—Manner of Feeding and Control. E. R. deOng	
	3-5	Practice: Oil Sprays. W. P. Tufts	
Oct. 4—	8-10	Practice: Copper Fungicides. W. L. Howard	
	10-11	Lecture: Insect Control (1). E. R. deOng	
	11-12	Convocation.	
	1-2	Lecture: Insect Control (2). E. R. deOng	
	2-3	Lecture: Compatibility of Insecticides and Fungicides. G. W. Gray	
	3-5	Practice: Contact Insecticides. W. P. Tufts	
Oct. 5—	8-9	Lecture: Secret Remedies. G. W. Gray	
	9-11	Practice: Sulphur Fungicides. W. P. Tufts	
	11-12	Lecture: Insect Control (3). E. R. deOng	
	1-3	Practice: Defoliating Insects. E. R. deOng	
	3-5	Practice: Power Spray Outfits. W. P. Tufts	
	7:30	Public Lecture: How the Short-Course Students can use the College of Agriculture. W. T. Clarke	
Oct. 6—	8-10	Practice: Garden Insects. E. R. deOng	
	10-12	Practice: Power Spray Outfits. W. P. Tufts	
	1-3	Practice: Control of Scale Insects. E. O. Essig	
	3-5	Practice: Control of Plant Lice and Leaf Hoppers. E. O. Essig	
	7:30	Public lecture: Rural Credits and Land Settlement. Elwood Mead	

**COLLEGE OF AGRICULTURE**



Demonstration of  
Grape-Juice  
Manufacture



Entomology Students  
Collecting Insects



Grape Picking



General View of Vineyards

Oct. 7—8-10 Practice: Codling Moth Control. E. O. Essig  
 10-12 Hand Spray Outfits. W. L. Howard

*Second Week*

Oct. 9—8-10 Practice: Spray Nozzles. W. P. Tufts  
 10-12 Practice: Spraying in the Orchard. W. L. Howard  
 1-3 Practice: Identification of Orchard Insects. E. O. Essig  
 3-5 Practice: Control of Peach Twig Borer. E. R. deOng  
 7:30 Public Lecture: Cow Testing Associations (Illustrated). G. H. True  
 Oct. 10—8-9 Lecture: Orchard Fumigation. E. R. deOng  
 9-10 Lecture: Insect Control by Means of Predaceous and Parasitic Insects. E. O. Essig  
 10-12 Practice: Orchard Fumigation. C. W. Woodworth  
 1-2 Lecture: General Apiculture. E. R. deOng  
 2-3 Lecture: General Apiculture. E. R. deOng  
 3-4 Lecture: Foul Brood of Bees. C. W. Woodworth  
 4-5 Lecture: Growth and Character of Insect Pests. E. O. Essig  
 Oct. 11—8-9 Lecture: Rearing Queen Bees. Geo. W. Coleman  
 9-10 Lecture: Fumigation of Cuttings. E. R. deOng  
 10-11 Lecture: When and How to Spray. W. P. Tufts  
 11-12 Convocation.  
 1-2 Lecture: Economics of Spraying. C. W. Woodworth  
 2-3 Lecture: Early History and Development of Vegetable Gardening in California. S. S. Rogers  
 3-5 Practice: Softwood Cuttings. W. L. Howard  
 Oct. 12—8-10 Practice: Hardwood Cuttings. W. P. Tufts  
 10-12 Practice: Layers and Runners. W. L. Howard  
 1-3 Practice: Stratification of Seeds. W. P. Tufts  
 3-5 Practice: Grafting Wax. W. L. Howard  
 7:30 Public Lecture: The Agricultural Extension Work and the City Dweller. W. T. Clarke  
 Oct. 13—8-10 Practice: Tongue Grafting. W. L. Howard  
 10-11 Lecture: Vegetable-Growing Districts of California; Marketing Problems. S. S. Rogers  
 1-3 Practice: Crown Grafting. W. L. Howard  
 3-5 Lecture and Discussion: Future Outlook and General Consideration of Vegetable Growing in California. S. S. Rogers  
 Oct. 14—8-10 Practice: Top Grafting. W. P. Tufts  
 10-12 Practice: Budding. W. L. Howard

*Third Week*

Oct. 16—8-9 Lecture: Small Fruits Culture. W. L. Howard  
 9-10 Lecture: Choosing the Orchard Location. W. P. Tufts  
 10-12 Practice: Bridge Grafting. W. L. Howard  
 1-3 Lecture and discussion: Selection of Gardening Location and Choice of Crops. S. S. Rogers  
 3-5 Practice: Planting Fruit Trees. W. L. Howard  
 7:30 Lectures: Construction of Silos. J. B. Davidson  
     Making and Feeding of Silage. F. W. Woll  
 Oct. 17—8-9 Lecture: Irrigation of Orchards—Laying Out the Distributing System. R. D. Robertson  
 10-12 Practice: Staking Out the Orchard. W. P. Tufts  
 1-3 Practice: Staking Out the Orchard. W. P. Tufts

Oct. 18—	8-9	Lecture: Irrigation of Orchards—Methods and Practices.	R. D. Robertson
9-10		Lecture: Rhubarb, Asparagus, and Artichoke Culture.	S. S. Rogers
10-11		Lecture: Irrigation of Orchards—Demonstration of Methods and Practices by Lantern Slides.	R. D. Robertson
11-12		Convocation.	
1-2		Lecture: Orchard Cover Crops.	W. L. Howard
2-3		Lecture: Potato Culture.	S. S. Rogers
3-5		Lecture and Practice: Making, Storing, and Shipping Cuttings.	F. Flossfeder
Oct. 19—	8-9	Lecture: Fruit-Bearing Habits of Deciduous Trees.	W. P. Tufts
9-10		Lecture: Almond Culture.	R. H. Taylor
10-11		Lecture: Irrigation of Orchards—Demonstration of Methods and Practices.	R. D. Robertson
11-12		Lecture: Walnut Culture.	R. H. Taylor
1-2		Lecture: Walnut Culture.	R. H. Taylor
2-4		Practice: Pruning Almonds.	R. H. Taylor
4-5		Lecture: Fruit-Bearing Habits of Deciduous Trees.	W. P. Tufts
Oct. 20—	8-9	Lecture: Picking Deciduous Fruits.	W. P. Tufts
9-10		Lecture: Onion, Cabbage, and Lettuce Culture.	S. S. Rogers
10-11		Lecture: Choice of the Location of the Vineyard.	F. Flossfeder
11-12		Lecture: Ornamentation of Country Home Grounds.	J. W. Gregg
1-2		Lecture: Methods by Which Vegetables are Produced; Seed Selection.	S. S. Rogers
2-3		Lecture: Propagation of the Olive.	F. Flossfeder
3-5		Practice: Detailed Inspection of the Vegetable Garden.	S. S. Rogers
7:30		Public Lecture: Landscape Improvement in Rural Communities (Illustrated).	J. W. Gregg
Oct. 21—	8-10	Lecture and practice: Nature and Requirements of the Olive.	F. Flossfeder
10-11		Lecture: Plant Diseases.	Ralph E. Smith
11-12		Lecture: Plant Diseases.	Ralph E. Smith

*Fourth Week*

## VITICULTURE, CITRICULTURE, AND SEMITROPICAL FRUITS

Oct. 23—	8-9	Lecture: Pruning Up to Bearing Age.	W. P. Tufts
9-11		Practice: Study of Fruit Buds in the Orchard.	W. L. Howard
11-12		Lecture: Citrus Fruits—Botanical Classification and Physiology.	J. E. Coit
	1-2	Lecture: Requirements for Plant Growth.	C. B. Lipman
	2-3	Lecture: Status of the Olive Industry in California.	F. Flossfeder
	3-5	Practice: Grafting of the Grape Vine.	F. Flossfeder
Oct. 24—	8-9	Lecture: Irrigation of Small Fruits.	W. A. Hutchins
9-10		Lecture: Pruning Up to Bearing Age.	W. P. Tufts
10-11		Lecture: Varieties of Citrus Fruits.	J. E. Coit
11-12		Lecture: Fruit Production as a Business.	R. L. Adams
	1-2	Lecture: Propagation of Citrus Fruits.	J. E. Coit
	2-3	Lecture: Choice of Varieties of Grapes.	F. T. Bioletti
	3-5	Lecture and Discussion: Root Crops, Celery, and Melon Culture.	S. S. Rogers
	7:30	Public Lecture: The Real American Folk School (Illustrated).	O. J. Kern

Oct. 25—	8-9	Lecture: Packing Deciduous Fruits.	W. P. Tufts
	9-10	Lecture: Pruning Bearing Trees.	W. L. Howard
10-11		Lecture: Soils, Sites, and Planting of Citrus Fruits.	J. E. Coit
11-12		Convocation.	
	1-2	Lecture: Improvements of Citrus Fruits by Breeding.	J. E. Coit
	2-3	Lecture: Requirements for Plant Growth.	C. B. Lipman
	3-5	Practice: Harvesting and Preparing Vegetables for Market.	
			S. S. Rogers
Oct. 26—	8-9	Lecture: Pruning Bearing Trees.	W. P. Tufts
	9-10	Lecture: Cultivating and Irrigating Citrus Orchards.	J. E. Coit
10-12		Practice: Pruning Young Fruit Trees.	W. P. Tufts
	1-2	Lecture: Grafting and Callusing Resistant Vines.	F. Flossfeder
	2-3	Lecture: Pruning Bearing Trees.	W. P. Tufts
	3-5	Lecture and discussion: Planning the Home Garden.	S. S. Rogers
Oct. 27—	8-9	Lecture: Frost Injury and Orchard Heating.	J. E. Coit
	9-10	Lecture: Picking and Packing Citrus Fruits.	J. E. Coit
10-12		Practice: Pruning Young Fruit Trees.	W. P. Tufts
	1-2	Lecture: Grafting and Callusing Resistant Vines.	F. Flossfeder
	2-3	Lecture: Diseases and Insects of Citrus Fruits.	J. E. Coit
	3-5	Practice: Pruning Bearing Apricot Trees.	W. L. Howard
	7:30	Public Lecture: Health on the Farm.	W. B. Herms
Oct. 28—	Choice of all-day Excursion to Yolo County Farms, or Lecture and Demonstrations on: Conveyance of Irrigation Water on the Farm; Survey and Construction of a Farm Ditch.		
			S. T. Harding, S. H. Beckett, O. W. Israelson

*Fifth Week*

Oct. 30—	8-9	Lecture: Grafting Over Vinifera Varieties; Nursery Stock.	
	9-10	Lecture: Marketing Citrus Fruits; By-Products.	F. Flossfeder
10-12		Practice: Pruning Young Fruit Trees.	J. E. Coit
	1-2	Lecture: The Chemical Composition of Soils, and Its Significance.	W. P. Tufts
	2-3	Lecture: Citrus Fruits—Profit and Loss.	C. B. Lipman
	3-5	Practice: Pruning Bearing Peach Trees.	J. E. Coit
Oct. 31—	8-9	Lecture: Fig Culture and Caprifiction.	W. L. Howard
	9-10	Lecture: Harvesting, Packing, and Marketing Figs.	I. J. Condit
10-12		Practice: Pruning Bearing Plum and Prune Trees.	I. J. Condit
	1-2	Lecture: Date Culture.	W. P. Tufts
	2-3	Lecture: Date Varieties.	I. J. Condit
	3-5	Practice: Pruning Bearing Apple Trees.	I. J. Condit
	7:30	Public Lecture: Problems in Citrus Culture (Illustrated).	W. L. Howard
			H. J. Webber
Nov. 1—	8-9	Lecture: Grafting and Callusing Resistant Vines.	F. Flossfeder
	9-10	Lecture: Laying Out and Planting Vineyards.	F. Flossfeder
10-11		Lecture: The Date—Artificial Ripening and Packing.	I. J. Condit
11-12		Convocation.	
	1-2	Lecture: Theory and Practice of the Use of Fertilizers.	C. B. Lipman
	2-3	Lecture: The Avocado in California.	I. J. Condit
	3-5	Practice: Preparation of Grape Juice.	W. V. Cruess
Nov. 2—	8-10	Practice: Study of Types of Citrus and Semitropical Fruits.	I. J. Condit
	10-12	Practice: Pruning Bearing Apple Trees.	W. L. Howard

1-2	Lecture: The Avocado—Propagation and Culture.	I. J. Condit
2-3	Lecture: The Avocado—Varieties and Marketing.	I. J. Condit
3-5	Practice: Laying Out a Vineyard and Planting Young Vines.	F. Flossfeder
Nov. 3—	8-9 Lecture: The Loquat in California.	I. J. Condit
	9-11 Practice: Pruning Bearing Pear Trees.	W. P. Tufts
11-12	Lecture: Problems of the Beginning Farmer.	Thomas F. Hunt
1-2	Lecture: The Persimmon—Varieties and Markets.	I. J. Condit
2-3	Lecture: Fertilization, Irrigation, and Cultivation of Vineyards.	F. Flossfeder
3-5	Practice: Study of Structure of Citrus Fruits—Acid Tests.	I. J. Condit
7:30	Public Lecture: Agricultural Education in California.	Thomas F. Hunt
Nov. 4—	Choice of Demonstration: Preparation of Land for Irrigation (all day)	
	or	S. H. Beckett, O. W. Israelson
8-9	Lecture: Factors Concerned in Building Construction.	H. L. Belton
9-11	Practice: Use of the Steel Square.	H. L. Belton
11-12	Lecture: Use of the Forge.	R. C. Ingram

*Sixth Week*

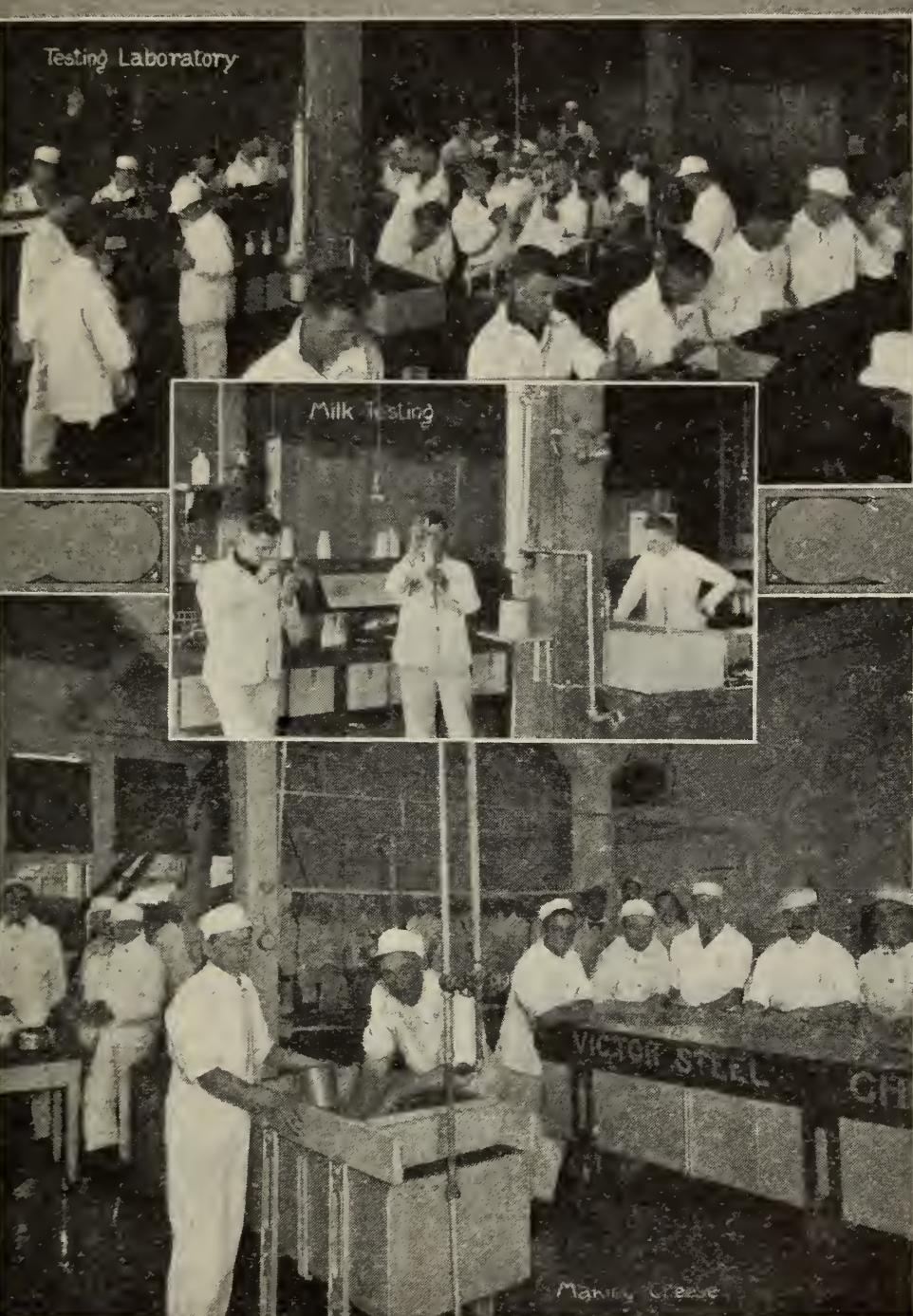
Nov. 6—	8-9 Lecture: Vine Pruning Principles.	F. Flossfeder
	9-11 Practice: Pruning Small Fruits.	W. P. Tufts
11-12	Lecture: Vine Pruning Methods.	F. Flossfeder
1-2	Lecture: Lime, Gypsum, and Alkali.	C. B. Lipman
2-3	Lecture: Non-Parasitic Diseases of the Vine.	F. T. Bioletti
3-5	Practice: Fungus Diseases of the Vine, and Use of Sulphur.	F. Flossfeder
Nov. 7—	8-9 Lecture: Guava and Feijoa Culture in California.	I. J. Condit
	9-10 Lecture: Pomegranate Culture.	I. J. Condit
10-11	Lecture: Phylloxera.	F. Flossfeder
11-12	Lecture: Olive Pickling and Oil Making.	W. F. Oglesby
1-3	Practice: Field Work with Phylloxera.	F. Flossfeder
3-5	Practice: Demonstration of Orchard Heaters.	I. J. Condit
7:30	Public Lecture: The Future of California Dairying.	H. E. Van Norman
Nov. 8—	8-9 Lecture: Insects Affecting the Vine.	F. Flossfeder
	9-10 Lecture: Miscellaneous Semitropical Fruits.	I. J. Condit
10-11	Lecture: Design and Construction of Open Drains.	W. W. Weir
11-12	Convocation.	
	1-2 Lecture: Soil Bacteria and the Nitrogen Supply.	C. B. Lipman
	2-3 Lecture: Phylloxera-Resistant Vines.	F. Flossfeder
	3-5 Practice: Pruning Old Vines.	F. Flossfeder
Nov. 9—	8-9 Lecture: Raisin Making.	F. Flossfeder
	9-11 Practice: A Study of Varieties of the Different Semitropical Fruits; Use of Score Cards.	I. J. Condit
11-12	Lecture: Markets and Marketing.	R. L. Adams
7:30	Public Lecture: State, County, and City Forests for California (Illustrated).	Walter Mulford
Nov. 10—	8-9 Lecture: Spraying Calendar.	W. L. Howard
	9-10 Lecture: Plant Diseases; Forage Crops.	Ralph E. Smith
10-11	Lecture: Farm Buildings.	J. B. Davidson
11-12	Lecture: Drainage Districts and Assessments.	W. W. Weir
2-3	Lecture: Petroleum Products, Fuel and Oil.	Jas. Koeber

**THE DAIRY MANUFACTURES SHORT COURSE****FOR CREAMERYMEN, OCTOBER 2 TO NOVEMBER 10, 1916****FOR CHEESEMAKERS, NOVEMBER 13 TO NOVEMBER 25, 1916**

The Dairy Manufactures Short Course is designed to meet the needs of those actively engaged in the manufacture of dairy products. The more practical phases of butter, cheese, and ice-cream making are taken up as completely as the time allows. The course includes lectures upon the secretion, composition, and handling of milk, the operation of the Babcock test and other commercial tests, dairy bacteriology, lectures and practice on separation, pasteurization and ripening of cream, production and use of starters, churning and moisture control in butter, manufacture of California and Cheddar types of cheese, scoring dairy products, ice-cream making, creamery accounting, creamery management, and dairy mechanics. The first six weeks of this course will be devoted to creamery butter making and related subjects, and the last two weeks to cheese making. Those whose interest centers in butter making will finish their work November 10, while those who are especially interested in cheese making will find the two weeks' work beginning November 13 a complete course in itself. It is not necessary for those who wish to take the work in butter making to take the two weeks' cheese course also, nor is it necessary that cheese makers take the six weeks in butter making. A part of these courses will consist of lectures on subjects which are of interest and importance to manufacturers as well as producers, and a limited amount of attention will be given to dairy cattle, hogs, and alfalfa.

Many of the creamery operators of the United States have taken a course in Dairy Manufactures at some dairy school. Under present conditions no man can expect to become competent to operate a creamery without taking such a course or serving

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an apprenticeship under a man who has the technical information offered in a course in Dairy Manufactures. The supply of competent men to operate creameries and cheese factories is not equal to the demand. Even men who have a fairly good practical knowledge of creamery or cheese-making operations will find these courses a great help to them in increasing their efficiency.

### SCHEDULE OF COURSES IN DAIRY MANUFACTURES

#### CREAMERY MEN'S COURSE

OCTOBER 2 TO NOVEMBER 10, 1916

Oct. 2—	8-12}	Registration hours.	
	1-5 }		
	7:30	Opening session. Music. Addresses: Benj. Ide Wheeler, President of University of California; Judge Peter J. Shields, and Thomas Forsyth Hunt, Dean of College of Agriculture; H. E. Van Norman, Dean of University Farm School, presiding.	
Oct. 3—	8-9	Lecture: Composition and Secretion of Milk.	L. M. Davis
	9-12	Practice: Testing Laboratory.	L. M. Davis and —
	1-5	Practice: Creamery.	H. H. Douglass and —
Oct. 4—	8-9	Lecture: Babcock Test for Butterfat in Milk.	L. M. Davis
	9-11	Practice: Creamery.	H. H. Douglass and —
	11-12	Convocation.	
	1-5	Practice: Creamery.	H. H. Douglass and —
Oct. 5—	8-9	Lecture: Babcock Test for Cream and Other Dairy Products.	L. M. Davis
	9-10	Lecture: Ice Cream as a Creamery Side Line.	H. S. Baird
	10-12	Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —
	7:30	Public Lecture: How the Short-Course Students Can Use the College of Agriculture.	W. T. Clarke
Oct. 6—	8-9	Lecture: Creamery Accounting.	H. H. Douglass
	9-10	Lecture: Handling and Standardizing Cream for Ice-Cream Making.	H. S. Baird
	10-11	Lecture: Gas Engines.	J. B. Davidson
	11-12	Lecture: Nature and Habits of Bacteria.	F. M. Hayes
	1-4	Practice: Testing Laboratory.	L. M. Davis and —
	4-5	Practice: Preparing Ice-Cream Mix.	H. S. Baird
	7:30	Public Lecture: Rural Credit and Land Settlement.	Elwood Mead
Oct. 7—	8-12	Practice: Ice Cream Making.	H. S. Baird

#### Second Week

Oct. 9—	8-9	Lecture: Methods of Securing Sweet Cream for Ice Cream Making.	H. S. Baird
	9-10	Lecture: Application of the Babcock Test.	L. M. Davis
	10-12	Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —
	7:30	Public Lecture: Cow Testing Associations (Illustrated).	G. H. True

Oct. 10—	8-9	Lecture: Milk and Cream Acidity Tests and Their Application.	
	9-10	Lecture: Breeds of Dairy Cows.	L. M. Davis
10-12		Practice: Testing Laboratory.	G. H. True
1-3		Practice: Dairy Mechanics.	L. M. Davis and —
3-5		Practice: Judging Dairy Cows.	J. B. Davidson
Oct. 11—	8-9	Lecture: Building the Dairy Herd.	G. H. True
	9-11	Practice: Creamery.	G. H. True
11-12		Convocation.	H. H. Douglass and —
	1-3	Practice: Judging Holstein Cows.	G. H. True
	3-5	Lecture and Practice: Abortion, Sterility, and Retained Afterbirth in Cattle.	J. Traum
Oct. 12—	8-9	Lecture: Use of the Lactometer.	L. M. Davis
	9-10	Lecture: Creamery Overrun.	H. H. Douglass
10-12		Practice: Testing Laboratory.	L. M. Davis and —
1-3		Lecture and practice: Finding Bacteria in Milk.	F. M. Hayes
3-5		Practice: Judging Guernsey Cows.	G. H. True
	7:30	Public Lecture: Agricultural Extension and the City Dweller.	W. T. Clarke
Oct. 13—	8-9	Lecture: Ignition, Adjustment.	J. B. Davidson
	9-10	Lecture: Constituents of Ice Cream.	H. S. Baird
10-12		Practice: Creamery.	H. H. Douglass and —
1-4		Practice: Creamery.	H. H. Douglass and —
4-5		Practice: Preparing Ice Cream Mix.	H. S. Baird
Oct. 14—	8-12	Practice: Ice Cream Making.	H. S. Baird

*Third Week*

Oct. 16—	8-9	Lecture: Making the Mix and Freezing Ice Cream.	H. S. Baird
	9-10	Lecture: The Butter Score Card.	L. M. Davis
10-11		Lecture: Creamery Equipment.	H. H. Douglass
11-12		Lecture: The Construction of Dairy Buildings for California.	C. L. Roadhouse
	1-2	Practice: Scoring Butter.	L. M. Davis
	2-3	Lecture: Practical Methods of Producing Clean Milk.	C. L. Roadhouse
	3-5	Practice: The Treatment of Wounds.	F. M. Hayes
7:30		Public Lectures: Construction of Silos. Making and Feeding of Silage.	J. B. Davidson
			F. W. Woll
Oct. 17—	8-9	Lecture: Moisture Tests for Butter.	L. M. Davis
	9-10	Lecture: Feeding Dairy Cows.	F. W. Woll
10-12		Lecture and Practice: Common Sources of Bacteria in Milk.	F. M. Hayes
	1-3	Practice: Dairy Mechanics.	Jas. Koeber
	3-5	Practice: Judging Jersey Cows.	G. H. True
Oct. 18—	8-9	Lecture: Tests for the Salt Content of Butter.	L. M. Davis
	9-11	Practice: Testing Laboratory.	L. M. Davis and —
11-12		Convocation.	
	1-3	Practice: Judging Dairy Heifers.	G. H. True
	3-5	Lecture and Clinic: Hog Cholera and Other Diseases of Hogs.	F. M. Hayes
Oct. 19—	8-9	Lecture: Tests for Preservatives, Sediment, etc., in Milk.	L. M. Davis
	9-12	Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —

Oct. 20—	8-9	Lecture: Testing Cows for Advanced Registry.	F. W. Woll
	9-10	Lecture: Classification of Ice Cream and Other Frozen Products.	H. S. Baird
	10-11	Lecture: Calf Feeding.	F. W. Woll
	11-12	Lecture: Creamery Plans.	H. H. Douglass
	1-4	Practice: Creamery.	H. H. Douglass and —
	4-5	Practice: Preparing Ice Cream Mix.	H. S. Baird
		Lecture: Electricity, Motors.	J. B. Davidson
	7:30	Public Lecture: Landscape Improvement in Rural Communities (Illustrated).	J. W. Gregg
Oct. 21—	8-12	Practice: Ice Cream Making.	H. S. Baird

*Fourth Week*

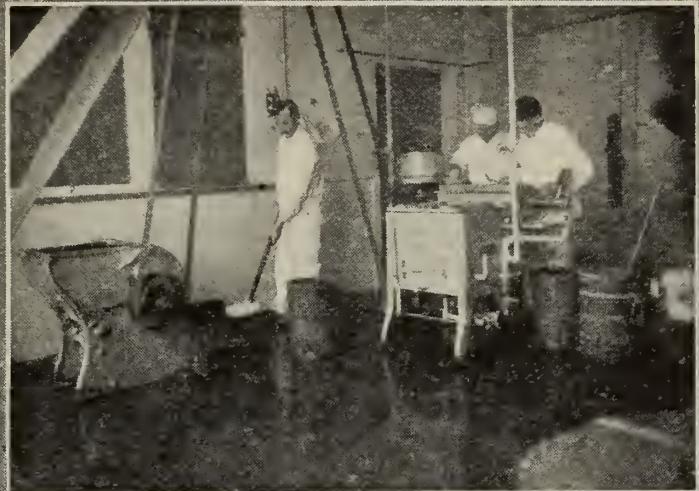
Oct. 23—	8-9	Lecture: Fancy Ice Cream, Ices, and Sherbets.	H. S. Baird
	9-10	Lecture: Grading of Cream.	L. M. Davis
	10-12	Practice: Creamery.	H. H. Douglass and —
	1-3	Practice: Creamery.	H. H. Douglass and —
	3-5	Lecture and Practice: Hog Cholera and Treatment to Prevent Cholera.	B. J. Cady
Oct. 24—	8-9	Lecture: The Judging of Market Butter.	L. M. Davis
	9-10	Lecture: Breeding Herd of Hogs.	J. I. Thompson
	10-12	Practice: Testing Laboratory.	L. M. Davis and —
	1-3	Lecture and Practice: Disease Germs in Milk.	F. M. Hayes
	3-5	Practice: Judging Market Hogs.	J. I. Thompson
	7:30	Public Lecture: The Real American Folk School (Illustrated).	O. J. Kern
Oct. 25—	8-9	Lecture: Preparation and Use of Starter for Butter Making.	L. M. Davis
	9-10	Lecture: Legumes and Their Adaptation.	P. B. Kennedy
	10-12	Practice: Testing Laboratory.	L. M. Davis and —
	1-2	Lecture: Electricity, Motors (continued).	J. B. Davidson
	2-3	Lecture: Creamery Reports.	H. H. Douglass
	3-5	Practice: Judging Poland China Hogs.	J. I. Thompson
Oct. 26—	8-10	Practice: Creamery.	H. H. Douglass and —
	10-11	Lecture: Legumes and Their Adaptation.	P. B. Kennedy
	1-3	Practice: Dairy Mechanics.	Jas. Koeber
	3-5	Practice: Judging Duroc Jersey Hogs.	J. I. Thompson
Oct. 27—	8-9	Lecture: Methods of Holding and Hardening Ice Cream.	H. S. Baird
	9-12	Practice: Creamery.	H. H. Douglass and —
	1-4	Practice: Creamery.	H. H. Douglass and —
	4-5	Practice: Preparing Ice Cream Mix.	H. S. Baird
	7:30	Public Lecture: Health on the Farm.	W. B. Herms
Oct. 28—	8-12	Practice: Ice Cream Making.	H. S. Baird

*Fifth Week*

Oct. 30—	8-9	Lecture: Methods Used for Calculating Swell in Ice Cream.	H. S. Baird
	9-10	Lecture: Pasteurization of Cream for Butter Making.	L. M. Davis
	10-12	Practice: Creamery.	H. H. Douglass and —
	1-4	Practice: Creamery.	H. H. Douglass and —
	4-5	Practice: Preparing Ice Cream Mix.	H. S. Baird

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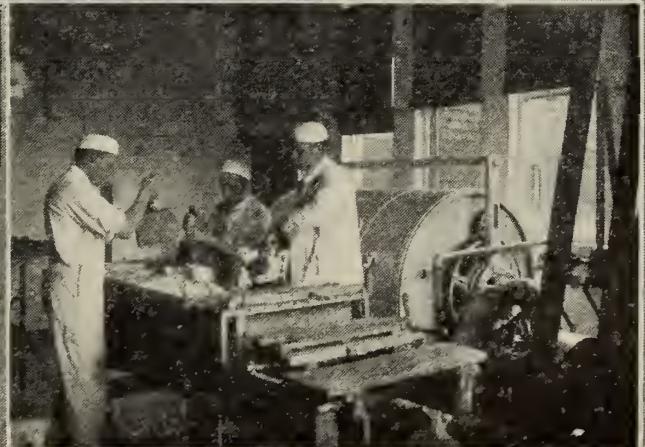
Making Ice Cream



Separating



Making Butter



Oct. 31—	8-9	Lecture: Ripening Cream for Butter Making.	L. M. Davis
	9-10	Lecture: Steam Boilers.	J. B. Davidson
10-11		Lecture: Alfalfa Culture.	B. A. Madsen
11-12		Lecture: Bacteria in Their Relation to Butter and Cheese.	
	1-5	Practice: Ice Cream Making.	F. M. Hayes
Nov. 1—	8-9	Lecture: Churning Cream.	H. S. Baird
	9-12	Practice: Creamery.	L. M. Davis
	1-5	Practice: Creamery.	H. H. Douglass and —
Nov. 2—	8-9	Lecture: Types of Ice Cream Freezers.	H. S. Baird
	9-10	Lecture: Washing, Salting, and Working Butter.	L. M. Davis
10-12		Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —
Nov. 3—	8-9	Lecture: Refrigeration Machinery.	J. B. Davidson
	9-12	Practice: Testing Laboratory.	H. H. Douglass
	1-5	Practice: Testing Laboratory.	H. H. Douglass
	7:30	Public Lecture: Agricultural Education in California.	Thomas F. Hunt
Nov. 4—	8-9	Lecture: Factors Concerned in Building Construction.	H. L. Belton
9-11		Practice: Use of the Steel Square.	H. L. Belton
11-12		Lecture: Use of the Forge.	R. C. Ingrim

*Sixth Week*

Nov. 6—	8-9	Lecture: Ice Cream Factory Management.	H. S. Baird
	9-10	Lecture: Packing Butter for Market.	L. M. Davis
10-12		Practice: Testing Laboratory.	L. M. Davis and —
	1-3	Lecture and Practice: Important Factors in Clean Milk Production.	C. L. Roadhouse
	3-5	Lecture and Demonstration: Tuberculosis and the Tuberculin Test.	F. M. Hayes
Nov. 7—	8-9	Lecture: Marketing Butter.	L. M. Davis
	9-12	Practice: Creamery.	H. H. Douglass and —
	1-2	Practice: Judging Butter.	H. S. Baird
	2-5	Demonstration: Slaughter Test and Meat Demonstration.	G. H. True
	7:30	Public Lecture: The Future of California Dairying.	H. E. Van Norman
Nov. 8—	8-9	Lecture: Market Grades of Butter.	L. M. Davis
	9-12	Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —
Nov. 9—	8-9	Lecture: Creamery Organization.	L. M. Davis
	9-12	Practice: Creamery.	H. H. Douglass and —
	1-5	Practice: Creamery.	H. H. Douglass and —
	7:30	Public Lecture: State, County, and City Forests for California (Illustrated).	Walter Mulford
Nov. 10—	8-9	Lecture: Plans and Equipment for the Ice Cream Factory.	H. S. Baird
	9-10	Lecture: Cold Storage Room Construction.	J. B. Davidson
10-12		Practice: Testing Laboratory.	L. M. Davis and —
	1-2	Lecture: Creamery Management.	L. M. Davis
	2-3	Lecture: Petroleum Products, Fuel and Oil.	Jas. Koebel
	3-5	Demonstration: Autopsy on Cow Re-acting to Tuberculin Test.	F. M. Hayes

**CHEESE MAKERS' COURSE**

NOVEMBER 13 TO NOVEMBER 25, 1916

*First Week*

Nov. 13—	8-9	Registration.	
	9-10	Lecture: Milk for Cheese Making.	H. S. Baird
	10-5	Practice: Cheese Making.	H. S. Baird
Nov. 14—	8-9	Lecture: Cheddar Cheese.	H. S. Baird
	9-10	Lecture: Composition of Milk.	L. M. Davis
	10-5	Practice: Cheese Making.	H. S. Baird
Nov. 15—	8-9	Lecture: Babcock Test for Milk.	L. M. Davis
	9-10	Lecture: Nature and Habits of Bacteria.	F. M. Hayes
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Testing Laboratory.	L. M. Davis
Nov. 16—	8-9	Lecture: Granular Process Cheese.	H. S. Baird
	9-10	Lecture: Herd Testing.	E. C. Voorhies
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Judging Dairy Cows.	G. H. True
Nov. 17—	8-9	Lecture: Moisture Control in Cheese.	H. S. Baird
	9-10	Lecture: Contagious Abortion and Sterility in Cattle.	F. M. Hayes
	10-5	Practice: Cheese Making.	H. S. Baird
Nov. 18—	8-9	Lecture: Cheese Factory Records.	H. S. Baird
	9-10	Lecture: Curing of Cheese.	H. S. Baird
	10-5	Practice: Cheese Making.	H. S. Baird

*Second Week*

Nov. 20—	8-9	Lecture: Cheese Defects and Their Causes.	H. S. Baird
	9-10	Lecture: Calf Feeding.	E. C. Voorhies
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Testing Laboratory.	L. M. Davis
Nov. 21—	8-9	Lecture: Scoring Cheese.	H. S. Baird
	9-10	Lecture: Babcock Test for Cream and Other Dairy Products.	L. M. Davis
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Judging Hogs.	J. I. Thompson
Nov. 22—	8-9	Lecture: Test for Acidity in Milk and Cream.	L. M. Davis
	9-10	Lecture: Feeding Dairy Cows.	E. C. Voorhies
	10-5	Practice: Cheese Making.	H. S. Baird
Nov. 23—	8-9	Lecture: Market Grades of Cheese.	H. S. Baird
	9-10	Lecture: Steam Boilers and Engines.	J. B. Davidson
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Bacteriology Laboratory.	F. M. Hayes
Nov. 24—	8-9	Lecture: Cheese Factory Plans and Equipment.	H. S. Baird
	9-10	Lecture: Udder Troubles and Their Treatment.	F. M. Hayes
	10-3	Practice: Cheese Making.	H. S. Baird
	3-5	Practice: Testing Laboratory.	H. H. Douglas
Nov. 25—	8-9	Lecture: Fancy Cheese.	H. S. Baird
	9-10	Lecture: A few Types of Foreign Cheese and their Possibilities in California.	H. S. Baird
	10-5	Practice: Cheese Making.	H. S. Baird

## THE SHORT COURSE IN POULTRY HUSBANDRY

OCTOBER 2 TO NOVEMBER 10, 1916

The object of the course in Poultry Husbandry is to give the student as comprehensive and detailed a grasp as possible of the fundamental principles of this subject and their practical application to the business side of poultry farming in order that he or she may be better fitted to handle successfully the practical, economical problems that are continually arising in the development and management of a commercial poultry plant. It is not sufficient that a poultryman know how to hatch, rear, feed, breed, and care for fowls. He must also know how to handle tools and skillfully perform such carpentry work as building houses, making coops, nests, hoppers, crates, etc.; how to grow such crops as alfalfa, rape, kale, beets, etc., for green feed for his fowls; how to irrigate his crops; how to plow and otherwise manipulate different soils for best results; how to operate, repair, and care for such farm machinery as gasoline engines, bone cutters, feed mills, alfalfa cutters, field tools, etc.; and finally, it is extremely important for a poultryman to know how to keep a clear, concise set of accounts, know the exact cost of operation in every phase of the work and maintain his business on a firm financial basis. The course of instruction in Poultry Husbandry has been designed to meet these needs and give each student as full and complete instruction in all the more important phases of the poultry business as can be accomplished in a six weeks' course.

All short-course students in Poultry Husbandry are therefore expected to attend lectures and practice work in Soils, Irrigation, Agricultural Engineering, Farm Management, Field and Forage Crops as shown in the schedule, pages 14-23.

*Poultry Management.*—The classroom work in this course will treat in detail of the selection and laying out of a poultry ranch; of natural and artificial incubation and brooding of chicks; the

*October 2 to November 10, 1916*

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Shortcourse Students in Poultry Husbandry 1915



Brooding



Trap Nests



selection of fowls for constitutional vigor; the laws of breeding and their application to the building up of flocks of heavy layers or choice table fowls; poultry house construction; the making of poultry equipment, such as trap nests, feed hoppers, fattening crates, etc.; the principles of poultry feeding and the best methods of feeding baby chicks, growing stock, laying hens, fowls to be fattened for market, etc.; killing, picking, and dressing stock for market; selecting and grading market eggs; packing and marketing poultry products to the best advantage; mating and handling the breeders; poultry parasites; diseases and sanitation; the general care and management of a poultry ranch.

The laboratory and field work carried on in conjunction with the lectures will include practice in learning to know the different breeds and varieties of fowls, their characteristics and utility qualities; grading, candling, and judging market eggs; making disinfectants and lice powder; studying the feeding qualities, both physical and chemical, of the various grains and mill feeds, and animal and mineral preparations used in poultry feeding; killing, picking, and dressing fowls for market and home use; caponizing, laying out poultry-house foundations, drawing plans of poultry equipment, estimating materials, keeping poultry accounts, etc.

*Incubation and Brooding.*—A practice course in operating incubators; keeping records; hatching eggs; brooding, feeding, and caring for young chicks, designed to give students actual practice in artificially hatching and rearing chicks. Each student will be given an incubator to overhaul and operate for one week of practice before being given any eggs. The incubator will then be set with eggs. When the chicks hatch each student will place his chicks in a separate pen in the brooder house and care for them till the end of the course. Open only to students taking all the poultry work.

**SCHEDULE OF THE SHORT COURSE IN POULTRY HUSBANDRY**

OCTOBER 2 TO NOVEMBER 10, 1916

*First Week*

Oct. 2—	8-12	Registration Hours.	
	1-5		
	7:30 p.m.	Opening session. Music. Addresses: Benj. Ide Wheeler, President of University of California; Judge Peter J. Shields, and Thomas Forsyth Hunt, Dean of College of Agriculture; H. E. Van Norman, Dean of University Farm School, presiding.	
Oct. 3—	8-9	Practice: A Study of Construction and Operation of Incubators.	W. E. Lloyd
	9-10	Lecture: History and Distinctive Characteristics of Breeds of Asiatic Class.	J. E. Dougherty
	10-11	Lecture: Conservation of Moisture.	B. A. Madson
	11-12	Lecture: The Business Aspects of Farming.	R. L. Adams
	12-12:10	Practice: Recording Incubator Temperatures.	W. E. Lloyd
	3-5	Practice: Identification and Study of Various Classes of Fowls.	W. E. Lloyd
	5-5:30	Practice: Operating Incubators.	W. E. Lloyd
Oct. 4—	8-9	Practice: Operating Incubators.	W. E. Lloyd
	9-10	Lecture: Wheat Culture.	B. A. Madson
	10-11	Lecture: Measurement of Water for Irrigation, Units of Measurement.	S. H. Beckett
	11-12	Convocation.	
	12-12:10	Practice: Recording Incubator Temperatures.	W. E. Lloyd
	3-5	Practice: Poultry Farm Management.	J. E. Dougherty
	5-5:30	Practice: Operating Incubators.	W. E. Lloyd
Oct. 5—	8-9	Practice: Operating Incubators.	W. E. Lloyd
	9-10	Lecture: History and Distinctive Characteristics of the American and English Breeds.	J. E. Dougherty
	11-12	Lecture: Establishing the Business of Farming.	R. L. Adams
	12-12:10	Practice: Taking Incubator Temperatures.	W. E. Lloyd
	1-3	Practice: Preparing Hatching Eggs.	W. E. Lloyd
	3-5	Practice: Breeds and Breed Types.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd
	7:30	Public Lecture: How the Short Course Students can use the College of Agriculture.	
Oct. 6—	8-9	Practice: Incubation: Preparing Hatching Eggs.	W. E. Lloyd
	9-10	Lecture: History and Distinctive Characteristics of Mediterranean, French, Polish, etc., Classes of Fowls.	J. E. Dougherty
	10-11	Lecture: Gas Engines.	J. B. Davidson
	11-12	Lecture: Wheat Culture.	B. A. Madson
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Origin and Formation of Soils.	C. F. Shaw
	2-4	Practice: Soils.	Alfred Smith
	5-5:30	Practice: Incubation.	W. E. Lloyd
	7:30	Public Lecture: Rural Credits and Land Settlement.	Elwood Mead
Oct. 7—	8-9	Practice: Incubation: Setting the Eggs.	W. E. Lloyd
	9-10	Lecture: Formation and Classification of Soils.	C. F. Shaw
	10-12	Practice: Soils.	Alfred Smith
	12-12:10	Practice: Incubation.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd

*Second Week*

Oct. 8—	8-9	Practice: Incubation—Third Day.	W. E. Lloyd
	9-10	Lecture: The Farmer's Home Vegetable Garden.	S. S. Rogers
10-12	Practice: Handling Gas Engines.	J. B. Davidson	
12-12:10	Practice: Incubation.	W. E. Lloyd	
1-3	Lecture and Conference: The Farmer's Home Vegetable Garden.	S. S. Rogers	
3-5	Practice: Variety Characteristics.	W. E. Lloyd	
5-5:30	Practice: Incubation.	W. E. Lloyd	
7:30	Public Lecture: Cow Testing Associations (Illustrated).	G. H. True	
Oct. 10—	8-9	Practice: Incubation—Fourth Day.	W. E. Lloyd
	9-10	Lecture: Variety Characteristics, Indications of Age, Sex and Vigor.	J. E. Dougherty
10-11	Lecture: Oat Culture.	B. A. Madson	
11-12	Lecture: Livestock Production as a Business.	R. L. Adams	
12-12:10	Practice: Incubation.	W. E. Lloyd	
5-5:30	Practice: Incubation.	W. E. Lloyd	
Oct. 11—	8-9	Practice: Incubation—Fifth Day.	W. E. Lloyd
	9-10	Lecture: Barley Culture.	B. A. Madson
10-11	Lecture: Irrigation of Grain and Cultivated Field Crops.	S. H. Beckett	
11-12	Convocation.		
12-12:10	Practice: Incubation.	W. E. Lloyd	
3-5	Practice: Poultry Farm Management.	J. E. Dougherty	
5-5:30	Practice: Incubation.	W. E. Lloyd	
Oct. 12—	8-9	Practice: Incubation—Sixth Day.	W. E. Lloyd
	9-10	Lecture: Principles of Incubation.	J. E. Dougherty
10-11	Lecture: Insects of Stored Grain.	E. R. deOng	
11-12	Lecture: Poultry Production as a Business.	R. L. Adams	
12-12:10	Practice: Incubation.	W. E. Lloyd	
3-5	Practice: Age, Sex and Vigor Indications.	W. E. Lloyd	
5-5:30	Practice: Incubation.		
	7:30	Public Lecture: Agricultural Extension and the City Dweller.	W. T. Clarke
Oct. 13—	8-9	Practice: Incubation: Seventh Day.	W. E. Lloyd
	9-10	Lecture: How to Operate an Incubator.	J. E. Dougherty
10-11	Lecture: Corn Culture.	B. A. Madson	
11-12	Lecture: Cost of Installation of a Farmer's Pumping Plant, Relative Economy of Gasoline Engines and Electric Motors, Construction of Wells.	B. A. Etcheverry	
12-12:10	Practice: Incubation.	W. E. Lloyd	
1-2	Lecture: Continuation of previous Subjects.	B. A. Etcheverry	
2-3	Lectures: Physical Properties of Soils.	C. F. Shaw	
3-5	Practice: Soils.	Alfred Smith	
5-5:30	Practice: Incubation. Test Eggs.	W. E. Lloyd	
Oct. 14—	8-9	Practice: Incubation—Eighth Day.	W. E. Lloyd
	9-10	Lecture: Soil Moisture, Amounts, Movements.	C. F. Shaw
10-12	Laboratory: Soils.	Alfred Smith	
12-12:10	Practice: Incubation.	W. E. Lloyd	
5-5:30	Practice: Incubation.	W. E. Lloyd	

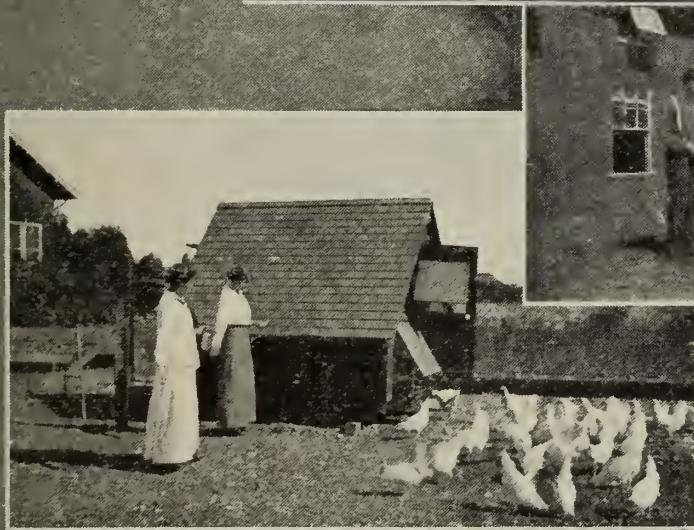
COLLEGE OF AGRICULTURE



Incubator Practice



Egg Testing



Feeding

*Third Week*

Oct. 16—	8-9	Practice: Incubation—Tenth Day.	W. E. Lloyd
	9-11	Practice: Soldering, Belt Lacing, etc.	Jas. Koeber
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Plant Diseases, Cereals.	Ralph E. Smith
	3-5	Practice: Study of Structure of an Egg.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd
	7:30	Public Lectures: Construction of Silos. Making and Feeding of Silage.	J. B. Davidson F. W. Woll
Oct. 17—	8-9	Practice: Incubation: Eleventh Day.	W. E. Lloyd
	9-10	Lecture: Selecting and Laying out a Poultry Farm.	J. E. Dougherty
	10-11	Lecture: Culture of Non-saccharine Sorghums.	B. A. Madson
	11-12	Lecture: Swine Production as a Business.	R. L. Adams
	12-12:10	Practice: Incubation.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd
Oct. 18—	8-9	Practice: Incubation—Twelfth Day.	W. E. Lloyd
	9-10	Lecture: Brooding Chicks.	J. E. Dougherty
	10-11	Lecture: Irrigation of Orchards; Demonstration Practice by Lantern Slides.	of Methods and R. D. Robertson
	11-12	Convocation.	
	12-12:10	Practice: Incubation.	W. E. Lloyd
	3-5	Practice: Poultry Farm Management.	J. E. Dougherty
	5-5:30	Practice: Incubation.	W. E. Lloyd
Oct. 19—	8-9	Practice: Incubation—Thirteenth Day.	W. E. Lloyd
	9-10	Lecture: Brooding Chicks.	J. E. Dougherty
	10-11	Lecture: Insects of Forage Crops.	E. R. deOng
	11-12	Lecture: Field Crops Production as a Business.	R. L. Adams
	12-12:10	Practice: Incubation.	W. E. Lloyd
	3-5	Practice: Judging and Handling Eggs.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd
Oct. 20—	8-9	Practice: Incubation—Fourteenth Day.	W. E. Lloyd
	9-10	Lecture: Poultry Housing.	J. E. Dougherty
	11-12	Lecture: Ornamentation of Country Home Grounds.	J. W. Gregg
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Soil Moisture, Control and Modification.	C. F. Shaw
	2-4	Practice: Soils.	Alfred Smith
	4-5	Lecture: Electricity, Motors.	J. B. Davidson
	5-5:30	Practice: Incubation—Test Eggs, Second Time.	W. E. Lloyd
	7:30	Public Lecture: Landscape Improvement in Rural (Illustrated).	Communities. J. W. Gregg
Oct. 21—	8-9	Practice: Incubation—Fifteenth Day.	W. E. Lloyd
	9-10	Lecture: Soils, Alkali, Drainage, Irrigation.	C. F. Shaw
	10-12	Practice: Soils.	Alfred Smith
	12-12:10	Practice: Incubation.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd

*Fourth Week*

Oct. 23—	8-9	Practice: Incubation—Seventeenth Day.	W. E. Lloyd
	9-11	Practice: Examination of Tillage Implements.	Jas. Koeber
	11-12	Lecture: Common Plants adapted for Country Home Decoration.	R. T. Stevens
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Requirements for Plant Growth.	C. B. Lipman
	3-5	Practice: Laying out a Foundation.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd

Oct. 24—	8-9	Practice: Incubation—Eighteenth Day.	W. E. Lloyd
	9-10	Lecture: Poultry Housing.	J. E. Dougherty
	10-11	Lecture: Useful Grasses of California.	P. B. Kennedy
	11-12	Lecture: Fruit Production as a Business.	R. L. Adams
	12-12:10	Practice: Incubation.	W. E. Lloyd
	5-5:30	Practice: Incubation.	W. E. Lloyd
	7:30	Public Lecture: The Real American Folk School (Illustrated).	O. J. Kern
Oct. 25—	8-9	Practice: Incubation—Nineteenth Day.	W. E. Lloyd
	9-10	Lecture: Legumes and their Adaptation.	P. B. Kennedy
	10-11	Lecture: Poultry Housing.	J. E. Dougherty
	11-12	Convocation.	
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Electricity, Motors (Continued).	J. B. Davidson
	2-3	Lecture: Requirements for Plant Growth (Continued).	
	3-5	Practice: Poultry Farm Management.	C. B. Lipman
	5-5:30	Practice: Incubation.	J. E. Dougherty
Oct. 26—	8-9	Practice: Incubation—Twentieth Day.	W. E. Lloyd
	9-10	Lecture: Poultry Housing.	J. E. Dougherty
	10-11	Lecture: Legumes and their Adaptation (Continued).	P. B. Kennedy
	11-12	Lecture: Dairying as a Business.	R. L. Adams
	12-12:10	Practice: Incubation.	W. E. Lloyd
	3-5	Practice: Drawing Plans of Poultry Hoppers, Nests, etc.	
	5-5:30	Practice: Incubation.	W. E. Lloyd
Oct. 27—	8-9	Practice: Incubation—Twenty-first Day.	W. E. Lloyd
	9-10	Lecture: Poultry Feeding.	J. E. Dougherty
	12-12:10	Practice: Incubation.	W. E. Lloyd
	1-2	Lecture: Veterinary Entomology.	W. B. Herms
	2-3	Lecture: Drainage in Irrigated Sections.	W. W. Weir
	5-5:30	Practice: Incubation.	W. E. Lloyd
	7:30	Public Lecture: Health on the Farm.	W. B. Herms
Oct. 28—	8-9	Practice: Incubation—Twenty-second Day.	W. E. Lloyd
	9-12	Lecture and Demonstration: Conveyance of Irrigation Water on the Farm. Survey and Construction of a Farm Ditch.	
		S. H. Beckett, S. T. Harding, and O. W. Israelson	
	12-12:10	Practice: Incubation.	W. E. Lloyd
	2-5	Practice: Chicks taken to Brooder.	W. E. Lloyd

*Fifth Week*

Oct. 30—	8-9	Practice: Brooding—Third Day.	W. E. Lloyd
	9-11	Practice: Methods of Making Field Determinations of Quantity of Irrigation Water to be Applied.	O. W. Israelson
	11-12	Lecture: The Use of Wood on the Farm.	M. B. Pratt
	12-12:10	Practice: Brooding.	W. E. Lloyd
	1-2	Lecture: The Chemical Composition of Soils and its Significance.	C. B. Lipman
	3-5	Practice: Poultry House Design.	W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd

Oct. 31—	8-9	Practice: Brooding—Fourth Day.	W. E. Lloyd
	9-10	Lecture: Poultry Feeding.	J. E. Dougherty
	10-11	Lecture: Alfalfa Culture.	B. A. Madson
	11-12	Lecture: Farm Bookkeeping. Demonstration of Assigned Practice.	R. L. Adams
	12-12:10	Practice: Brooding.	W. E. Lloyd
	3-5	Practice: The Teeth of the Horse.	F. M. Hayes
	5-5:30	Practice: Brooding.	W. E. Lloyd
Nov. 1—	8-9	Practice: Brooding—Fifth Day.	W. E. Lloyd
	9-10	Lecture: Veterinary Entomology.	W. B. Herms
	10-11	Lecture: Poultry Feeding.	J. E. Dougherty
	11-12	Convocation.	
	12-12:10	Practice: Brooding.	W. E. Lloyd
	1-2	Lecture: Theory and Practice of the Use of Fertilizers.	C. B. Lipman
	2-3	Lecture: Impurities and Viability of Agricultural Seeds.	P. B. Kennedy
	3-5	Practice: Poultry Farm Management.	J. E. Dougherty
	5-5:30	Practice: Brooding.	W. E. Lloyd
Nov. 2—	8-9	Practice: Brooding—Sixth Day.	W. E. Lloyd
	9-10	Lecture: Poultry Feeding.	J. E. Dougherty
	10-11	Lecture: Culture of Root Crops.	J. W. Gilmore
	11-12	Lecture: The Owner and the Tenant.	R. L. Adams
	12-12:10	Practice: Brooding.	W. E. Lloyd
	3-5	Practice: Identification and Mixing Poultry Feeds.	W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd
Nov. 3—	8-9	Practice: Brooding—Seventh Day. Feed Mash.	W. E. Lloyd
	9-10	Lecture: Poultry Feeding.	J. E. Dougherty
	10-11	Lecture: Farm Implements and Machinery.	Jas. Koeber
	11-12	Lecture: Problems of the Beginning Farmer.	Thomas F. Hunt
	12-12:10	Practice: Brooding.	W. E. Lloyd
	1-3	Practice: Examination of Mowers and Manure Spreaders.	Jas. Koeber
	5-5:30	Practice: Brooding.	W. E. Lloyd
	7:30	Public Lecture: Agricultural Education in California.	Thomas F. Hunt
Nov. 4—	8-9	Practice: Brooding—Eighth Day.	W. E. Lloyd
	9-11	Practice: Use of the Steel Square.	H. L. Belton
	11-12	Lecture: Use of the Forge.	R. C. Ingrim
	12-12:10	Practice: Brooding.	W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd

*Sixth Week*

Nov. 6—	8-9	Practice: Brooding—Tenth Day.	W. E. Lloyd
	9-10	Practice: Forging and Welding.	R. C. Ingrim
	10-11	Lecture: The Economics of the Tractor.	J. B. Davidson
	11-12	Lecture: The Farmer's Water Right in California.	Frank Adams
	12-12:10	Practice: Brooding.	W. E. Lloyd
	1-2	Lecture: Lime, Gypsum and Alkali.	C. B. Lipman
	3-5	Practice: Identification and Mixing Poultry Feeds.	W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd

Nov. 7—	8-9	Practice: Brooding—Eleventh Day.	W. E. Lloyd
	9-10	Lecture: Principles of Breeding.	J. E. Dougherty
	10-11	Lecture: Bean Culture.	B. A. Madson
	11-12	Lecture: Profit and Losses of Farming.	R. L. Adams
	12-12:10	Practice: Brooding.	W. E. Lloyd
	2-5	Demonstration: Slaughter Test and Meat Demonstration.	G. H. True
	5-5:30	Practice: Brooding.	W. E. Lloyd
	7:30	Public Lecture: The Future of California Dairying.	H. E. Van Norman
Nov. 8—	8-9	Practice: Brooding—Twelfth Day.	W. E. Lloyd
	9-10	Lecture: Principles of Breeding.	J. E. Dougherty
	10-11	Lecture: Breeding for Egg or Meat Production.	J. E. Dougherty
	11-12	Convocation:	
	12-12:10	Practice: Brooding.	W. E. Lloyd
	1-2	Lecture: Soil Bacteria and the Nitrogen Supply.	C. B. Lipman
	2-3	Lecture: Crop Rotation.	B. A. Madson
	3-5	Practice: Poultry Farm Management.	J. E. Dougherty
	5-5:30	Practice: Brooding.	W. E. Lloyd
Nov. 9—	8-9	Practice: Brooding—Thirteenth Day.	W. E. Lloyd
	9-11	Practice: Cutting Model Rafters.	H. L. Belton
	11-12	Lecture: Marketing Poultry to Best Advantage.	J. E. Dougherty
	12-12:10	Practice: Brooding.	W. E. Lloyd
	3-5	Practice: Making Lice Powder and Disinfectants.	W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd
	7:30	Public Lecture: State, County and City Forests for California (Illustrated).	Walter Mulford
Nov. 10—	8-9	Practice: Brooding—Fourteenth Day.	W. E. Lloyd
	9-10	Lecture: Plant Diseases; Forage Crops.	Ralph E. Smith
	10-11	Lecture: Diseases and Parasites of Poultry.	J. E. Dougherty
	11-12	Lecture: Drainage Districts and Assessments.	W. W. Weir
	12-12:10	Practice: Brooding.	W. E. Lloyd
	2-3	Lecture: Petroleum Products, Fuel and Oil.	Jas. Koeber
	3-5	Practice: Killing, Picking and Dressing Fowls for Market.	
			W. E. Lloyd
	5-5:30	Practice: Brooding.	W. E. Lloyd

N.B.—Incubation and brooding work will have to be attended to Sundays as well as week days.

**THE TRACTOR SHORT COURSE****NOVEMBER 13 TO 24, 1916**

The rapid development of the farm tractor, together with the increasing scarcity and cost of work animals, has stimulated the interest in tractors and has occasioned the demand for a short practical course in tractor operation and management. It is a matter of common observation that the economic success of the tractor depends to a large extent upon the skill with which it is managed.

The Tractor Short Course will consist of lectures and discussions on the subject of gas and oil engines, their accessories and equipment, and the application of these engines to tractors. Many leading makes of tractors used in California will be available for instructional use and as far as possible the student will be given actual practice in handling these tractors on the road and in the field under the guidance of an experienced operator. The Agricultural Engineering Shops will be used for practice work in mechanics related to the tractor. A discussion of and practice with tractor implements will be a part of the course.

In order that adequate preparation may be made for this course applications for enrollment must be made two weeks before the opening of the course.

**STAFF**

J. B. DAVIDSON

R. C. INGRIM

JAMES KOEBER

H. L. BELTON

Assisted by members of the staff of the College of Agriculture and a corps of expert mechanics.

**EXPENSES**

*Fees.*—A registration fee of \$1.00 is charged each student.

*Rooms* may be secured at fifty cents a day, and in some cases less.

*Board* in the University Farm Cafeteria need not exceed \$5.00 a week.

For further information concerning the Tractor Short Course address

DEAN, UNIVERSITY FARM,  
DAVIS, CALIFORNIA.

COLLEGE OF AGRICULTURE

Tractor Plowing



Altalfa



Sorghum



Filling Silo  
with Sorghum



**SCHEDULE OF THE TRACTOR SHORT COURSE**

Nov. 13—8:00-12:00	Registration.
2:00	Opening Session. Address: H. E. Van Norman, Dean of the University Farm School.
	Announcements.
	Lecture: Gas Engine Principles and Types.
Nov. 14—8-9:30	Lecture: Fuels and Carbureters.
9:30-12	Practice Work as Assigned to Different Groups.
1-2:30	Lecture: Carbureter Adjustment.
2:30-5	Practice Work.
Nov. 15—8-9:30	Lecture: Ignition—High and Low Tension Systems.
9:30-12	Practice Work.
1-2:30	Lecture: Magnetos.
2:30-5	Practice Work.
Nov. 16—8-9:30	Lecture: Governing and Cooling Mechanism.
9:30-12	Practice Work.
1-2:30	Lecture: Lubrication.
2:30-5	Practice Work.
Nov. 17—8-9:30	Lecture: Valve Timing.
9:30-12	Practice Work.
1-2:30	Lecture: Testing Horsepower.
2:30-5	Practice Work.
Nov. 18—8-9:30	Lecture: Tractor Motors.
9:30-12	Practice Work.
1-2:30	Lecture: Tractor Types, Adaptability and Construction.
2:30-5	Practice Work.
Nov. 20—8-9:30	Lecture: Tractor Operation and Adjustments.
9:30-12	Practice Work.
1-2:30	Lecture: Gas Engine Troubles.
2:30-5	Practice Work.
Nov. 21—8-9:30	Lecture: Tractor Repairing.
8:30-12	Practice Work.
1-2:30	Lecture: Tillage Methods.
2:30-5	Practice Work.
Nov. 22—8-9:30	Lecture: Plows, Adjustments and Operation.
9:30-12	Practice Work.
1-2:30	Lecture: General Tillage Machinery.
2:30-5	Practice Work.
Nov. 23—8-9	Lecture: Seeding and Harvesting Machinery.
9:30-12	Practice Work.
1-2:30	Lecture: Summary.
2:30-5	Practice Work.

The practice work will consist of the following exercises assigned to different groups in turn. Opportunity will be given for each student to do the actual work as far as possible.

Carbureter adjustment.	Babbitting of bearings.
Igniter timing.	Pipe fitting.
Valve timing.	Rope and cable splicing.
Ignition troubles.	Soldering.
Clutch adjustment.	Field practice with tractors, plows, and other tillage machines.
Gas engine testing.	Forge practice.
Operation of several tractors cover- ing several periods.	Welding.
Belt lacing.	Sharpening plow shares.

## THE COLLEGE OF AGRICULTURE

The College of Agriculture of the University of California has a number of activities besides the Farmers' Short Courses outlined in this announcement. There are 637 students taking four-year courses in agriculture at Berkeley, leading to the degree of Bachelor of Science. There are 314 students registered in the three-year course at the University Farm. The College of Agriculture also conducts courses in agriculture by correspondence, with an enrollment of over 20,000 different persons. Through its Agricultural Extension Division it conducts farmers' institutes and movable schools. Advice concerning farm questions is given by correspondence or through personal visits. In attending to individual inquiries and other correspondence over 92,000 letters were written last year. To facilitate this work a system of county farm advisers has been adopted, thirteen counties having now resident farm advisers. In order to create a greater interest in practical agriculture in California, boys' clubs have been organized in 100 high schools.

The foundation for all the work of the College of Agriculture lies in its investigations, carried on by members of the Agricultural Experiment Station. Over 300 different experiments have been in progress during the present year. The results of the experiments are published in bulletins from time to time, which are sent free to any citizen of the state upon request. Applications may be addressed to the Director of Agricultural Experiment Station, University of California, Berkeley, Cal.

*Graduate Work.*—Opportunities of an unusual character are offered by reason of the large number of research laboratories in the College of Agriculture. A special department of graduate work in Tropical Agriculture has been organized. A complete announcement of the Graduate School will be sent free to university and college graduates.

*The Four-Year Course in Agriculture.*—Students wishing to enter any one of the seventeen courses in the College of Agri-

culture should apply to the Recorder of the Faculties, University of California, Berkeley, California, for the Prospectus of the College of Agriculture, which gives a full outline of these courses, and for proper blanks for submitting the record of their high-school education. Only students who have been graduated from an accredited high school or who have an equivalent preliminary education are admitted to these courses. The freshman and sophomore years must be spent on the University campus at Berkeley, but one or more semesters of the junior and senior years may be taken at the University Farm at Davis or elsewhere. The place of study during the last two years is controlled by the particular course or major subject pursued. The following courses in major subjects are offered: Agricultural Chemistry, Agricultural Education, Agronomy, Animal Husbandry, Citriculture and Semitropical Fruits, Dairy Industry, Entomology, Parasitology, Farm Mechanics, Forestry, Genetics, Irrigation, Landscape Gardening and Floriculture, Nutrition, Plant Pathology, Pomology, Poultry Husbandry, Soils and Fertilizers, Veterinary Science, and Viticulture and Enology. New students register August 18 and 19, 1916.

*The Three-Year Course in Agriculture.*—This course is given at the University Farm, Davis. During the first year students who are not graduates of high schools are required to take certain fundamental courses in chemistry, botany, English, commercial arithmetic, etc. Beginning with the second year, students may specialize, if they choose, either in Animal Husbandry or Horticulture. High-school graduates may usually complete the work in two years. No student is permitted to enter the three-year course at the University Farm School below the age of 18, unless he is a graduate of a high school of recognized standing. Those who are not graduates of high schools are required to pass an entrance examination in English composition and arithmetic. These examinations are given by county superintendents in nearly all the counties of the state. Applications for admission should be sent to the Dean of the University Farm School so as to reach him, if possible, before September 1. The University Farm School will open on September 15, 1916.

# UNIVERSITY OF CALIFORNIA

## COLLEGE OF AGRICULTURE

### AGRICULTURAL EXPERIMENT STATION

#### RESEARCH AND INSTRUCTION

#### RESIDENT INSTRUCTION

##### 1. Farmers' Short Courses,

beginning October 2, 1916.

##### 2. University Farm School,

beginning September 15, 1916.

##### 3. Undergraduate Courses in Agriculture,

beginning August  
17, 1916.

##### 4. Graduate Courses in Agriculture, beginning Aug. 17, 1916.

#### NON-RESIDENT INSTRUCTION

##### 1. Correspondence Courses in Agriculture, beginning any time.

##### 2. Agricultural Extension, all the time.

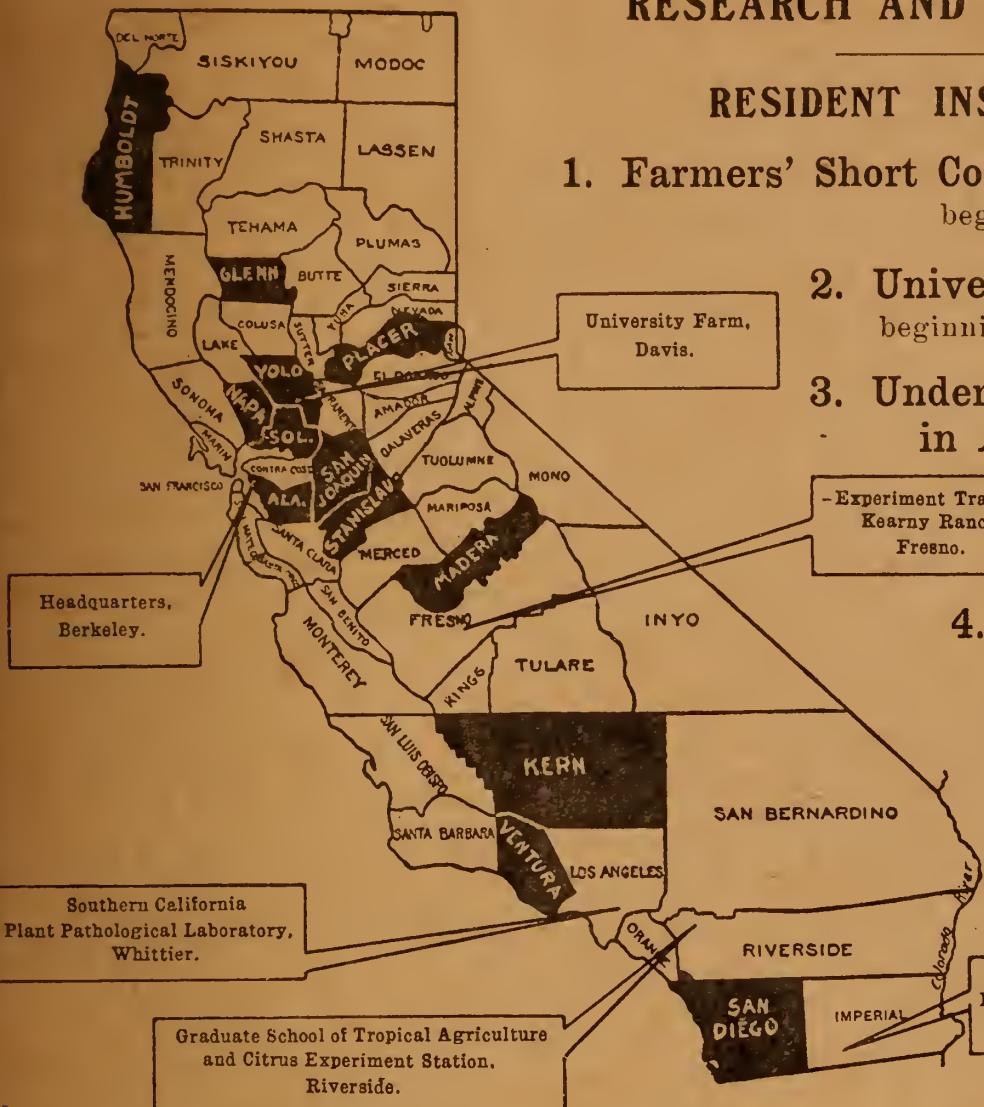
#### RESEARCH

It is its duty to investigate the processes of plant and animal life, to discover the methods of control of diseases and insect enemies, to study the most economical methods of producing and marketing farm products and to consider those rural institutions which will best promote both the wealth and welfare of the citizens of the State. More than three hundred experimental projects are under way. Over two hundred and fifty thousand bulletins and circulars giving the results of these researches are distributed annually. They are sent to citizens of the State free upon request. Address Director of the Agricultural Experiment Station, University of California, Berkeley.

Counties in black have Farm Adviser.

The work of the College of Agriculture is divided into two parts:

RESEARCH AND INSTRUCTION





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**UNIVERSITY OF CALIFORNIA BULLETIN**

A SERIES IN THE ADMINISTRATIVE BULLETINS  
OF THE UNIVERSITY OF CALIFORNIA

Entered July 1, 1911, at the Post Office at Berkeley, California,  
as second-class matter, under the Act of Congress  
of July 16, 1894

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Issued monthly from July to March and twice a month from  
April to June

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These Bulletins include:

- The Circular of Information, Academic Departments.
- The Annual Announcement of the Summer Session.
- The Annual Announcement of the Medical School, the Colleges of Dentistry, Law, and Pharmacy.
- The President's Annual Report.
- The Prospectus of the College of Agriculture.